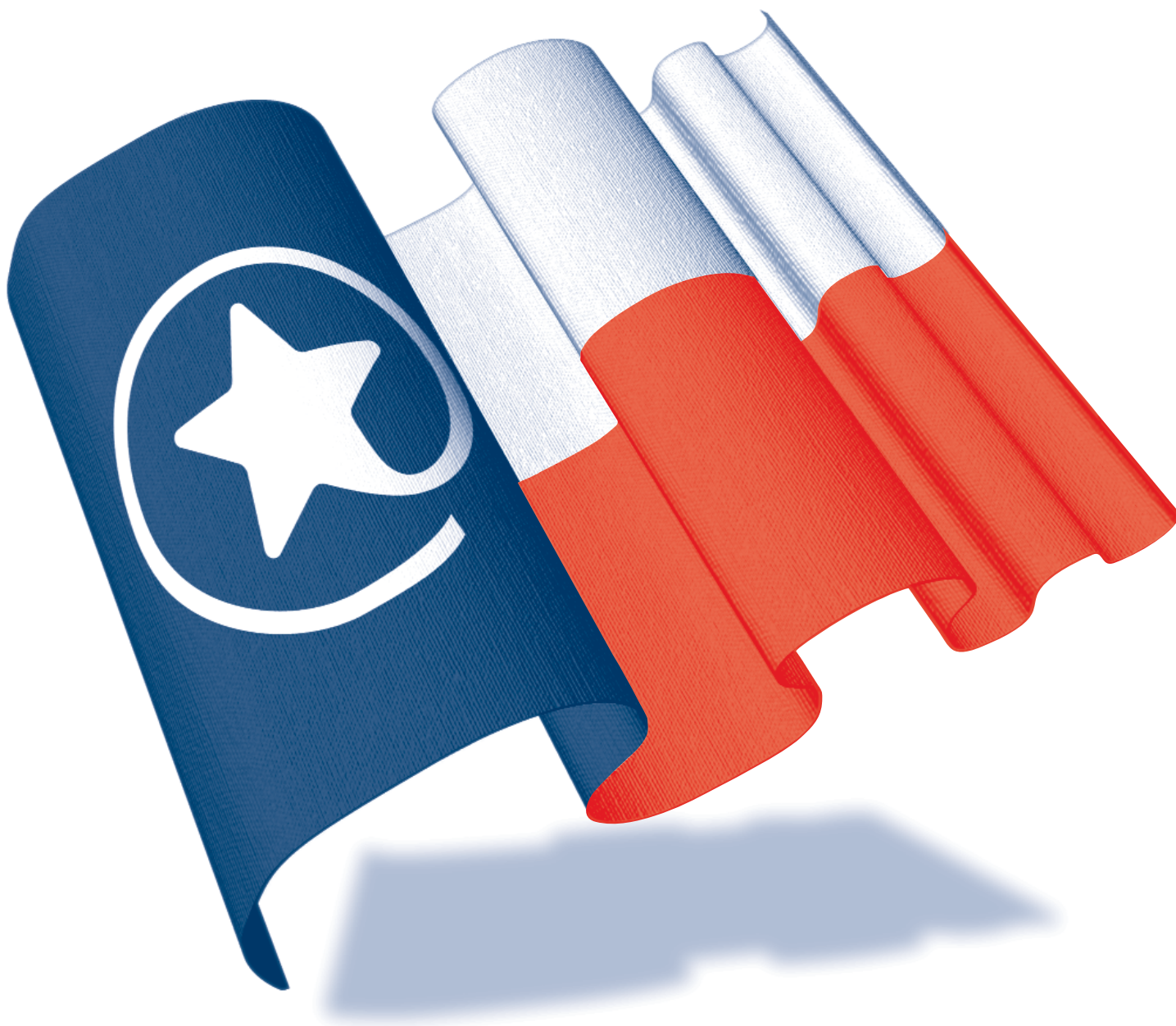


C A T A L Y S T

FOR GOVERNMENT TRANSFORMATION



2002 BIENNIAL REPORT ON
INFORMATION RESOURCES MANAGEMENT



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THE STATE OF THE STATE IN INFORMATION RESOURCES MANAGEMENT

The State of Texas was acknowledged by the Progressive Policy Institute in a 2002 study as being third among the states in the utilization of Digital Government. Brown University conducted a study in 2002 on accessibility, security, and privacy of government Web sites that ranked Texas as sixth in the U.S. This study found that Texas leads the list of all sites having foreign language adaptability, with 46 percent. The Center for Digital Government, a national research and advisory institute, recently ranked TexasOnline as fifth in its annual Best of the Web competition for states. The Center ranked the City of Dallas Web site, which is hosted by TexasOnline, as fifth among cities. Although the Texas Legislature is conservative in budgeting for Information Technology at about four percent of the state's annual budget, Texas is widely recognized as a leader in the application of Information Technology (IT) to make government efficient, effective, and citizen-oriented.

State agencies strive to apply best practices in the development and application of IT. Systemic improvements in IT management result as 95 percent of Information Resources Managers complete continuing education requirements in critical skills areas. Eighty percent of state agencies participate in interagency initiatives. Notable progress has been made in reducing overlapping human services programs through the development of the State of Texas Assistance and Referral System and the evolution of the Texas Integrated Eligibility Redesign System. The Texas Geographic Information Council ensures that state agencies and regional government agencies can share spatial data through a common base map and uniform practices. TexasOnline has provided a single infrastructure for state and local online government and a single payment vehicle for online payments.

Still, a review of progress against the goals of the 2001 State Strategic Plan for Information Resources Management demonstrates that more work must be done. Texas state government faces a shortfall in revenues for the upcoming biennium. Private companies have reported significant savings through implementation of enterprise-wide projects. But only a third of Texas state agencies participate in any interagency data-sharing activities. Only ten percent of agencies report sharing resources to prevent duplication of services. Accountable electronic record preservation policies exist, but implementation is spotty and managed by individual agencies. A state data center has collocated some agency activities, but the benefits of consolidation have not been fully realized. The convergence of the nation's critical infrastructures and computer networks has warranted discussion at all levels of government to ensure the nation's preparedness against attacks and to further strengthen our national security.

State government must continue to find ways to operate rationally and reliably with an eye constantly toward the citizens who pay the bills. It is with this imperative that I present to you DIR's Biennial Report on Information Resources Management, *Catalyst for Government Transformation*.



Carolyn Purcell
Chief Information Officer for the State of Texas



O V E R V I E W

Information resources (IR) are vital assets of state government belonging to the people of Texas. It is the responsibility of government entities to manage and provide security for those assets, and protect the privacy of citizens' personal information. The 2001 State Strategic Plan for Information Resources Management (State Strategic Plan) focused on transforming the delivery of government services through information resources technology.¹ This report evaluates the progress of state government in fulfilling its responsibilities to the citizens of the state by meeting the goals and objectives of the State Strategic Plan.

To provide input and guidance for the report, the Department of Information Resources (DIR) assembled a working group of state agency information resources managers. The working group developed the survey of state agencies and universities used to gather data for the *Progress toward the Goals* section. The group also helped select and rank topics for the *Legislative Issues* section and the important technology and management trends highlighted in the *Trends* section.

Other sources of information included research and consultation from leading industry analysts such as Gartner Group, META Group, and Giga Information Group; other DIR surveys and reports; and research and reports from other agencies in Texas and other states.

DIR's board of directors has provided constant leadership in the pursuit of the agency's mission. The members of the board have influenced this report through their commitment to excellence, their attention to their duties, and the high expectations they place on the delivery of information technology solutions in Texas.

PROGRESS TOWARD THE GOALS

The mission expressed in the 2001 State Strategic Plan is to transform state government by integrating stand-alone "silos" of data collected by individual agencies, eliminating

needless duplication of data, and making electronic government services accessible to citizens anywhere in the state.

The state has made considerable progress toward those goals over the last biennium:

- Cooperation among state entities and across levels of government continues to increase, thus reducing duplicate services, combining programs, and making government more transparent and open.
- More state agencies are adopting industry best practices for development and management of IR projects and applications.
- Security of information resources has become a top priority of agencies and universities and Texas is a leader among states in information resources security.
- Electronic access to state services is growing rapidly; TexasOnline is providing innovative new services and DIR is seeking additional government entities to provide services through TexasOnline.

Since 2000, several state agencies and universities have received statewide and national recognition for outstanding IR projects. Many of these efforts, described briefly in *Appendix D*, set exceptionally high standards for innovative, proficient, and judicious use of state resources.

EXPENDITURES FOR THE 2002–2003 BIENNIUM

The events of September 11, 2001, the recession, and the dramatic decline in the stock market have caused many organizations to scale back their IR plans. Private and public entities have indicated that when budgets can be increased, their top three priorities will be upgrading infrastructure, standardizing enterprise architectures, and enhancing security.

LEGISLATIVE ISSUES

Seven issues present barriers to achieving the goals of the 2001 State Strategic Plan. As a result of security concerns, the issues raised in this report focus on the development and protection of the state's IR infrastructure and on the preservation of electronic data and records.

Issue 1 – E-Government Infrastructure

TexasOnline, the state's award-winning World Wide Web portal, continues to develop innovative services for the public. Reinvesting the state's share of the gross revenue back into the portal would help accelerate the deployment of e-government.

Issue 2 – Infrastructure Security

Critical state infrastructure such as electric power grids, municipal water supplies, and telecommunications networks may be at risk of terrorist attack. Key information about infrastructure, including maps, specifications, and security reports, must not be easily available to terrorist organizations. In addition, state entities should conduct background checks for prospective network and IR security personnel through the Department of Public Safety.

Issue 3 – Investigation and Prosecution of Computer Crime

Security of information resources requires a two-pronged attack: prevention and prosecution. The Security Office at DIR is facilitating the state's prevention efforts, but more aggressive prosecution of computer crime is needed. The state's investigative and prosecutorial efforts should be given higher priority to strengthen the security of state networks and information resources.

Issue 4 – Rural Access to Telecommunications Services

Statutes regulating the state's telecommunications network, TEX-AN, work at cross-purposes to the Telecommunications Infrastructure Fund (TIF) statutes, effectively preventing some citizens from obtaining services that the TIF legislation

was designed to provide. The statutes should be modified to clarify how telecommunications services could be delivered to rural Texans through TEX-AN.²

Issue 5 – Disaster Recovery and Business Continuity Planning

In the event of a large, Austin-based disaster, restoration of some of the state's business units may fail due to a lack of appropriate recovery solutions for technologies. Recovering from such a disaster will be difficult unless clear recovery priorities are established at a statewide level.

Issue 6 – Consolidation of IR Management for Small Agencies

Many small agencies cannot afford a full-time IR support staff. As a result, key functions such as network security are often neglected. Small agencies may be better served by consolidating their IR needs under a single service provider. In addition to managing core IR functions, a service provider could function as information resources manager for the small agencies, performing IR planning and acting as liaison between the agencies and the Legislature.

Issue 7 – E-Mail Records Management

Managing e-mail is one of the most difficult challenges facing both public and private organizations. Records are frequently destroyed or lost because users are not aware that e-mail can be an official record. Administrators often do not have tools or training to manage e-mail as official government records. Aggressive, immediate action is required to bring management of e-mail records into compliance with records management standards, and to provide a common framework and facilities for long-term archival of all state e-mail records.

TRENDS

DIR has identified four important trends that will influence state IR management over the next biennium: Governance, Asset Management, Wireless and Mobile Computing, and eXtensible Markup Language.

Governance

Information resources are usually indispensable tools of every agency, and their growth and management affect the entire organization. Transforming delivery of government services often requires organizations to restructure and integrate their IR services through interagency cooperation and collaboration. The public and private sectors are turning to steering committees to guide the development of IR within and across organizational boundaries. These committees can resolve conflicting interests, set priorities, represent users, and guide IR planning and management.

Asset Management

Asset management is not a new concept in information resources; however, the scope of asset management has grown dramatically in the past few years. Asset management now encompasses software, hardware, and personnel skills. Industry sources indicate that applying best practices in asset management can save more than five percent of an organization's IR budget in the first year of implementation, and five to ten percent annually thereafter.

An asset management program should provide planners up-to-date information about an organization's portfolio of applications, inventory of hardware, and range of personnel skills. Ideally, IR steering committees can use asset management systems to estimate the impact of changes, new programs, or new technologies that are proposed.

Wireless and Mobile Computing

Wireless connectivity and mobile computing are different technologies, but they are frequently used in tandem. These technologies have several potential advantages for agencies that rely on mobile workers. A mobile worker who has wireless connectivity can stay in touch with the office while on the road. However, wireless connectivity poses its own security problems, which must be addressed. Furthermore, the rapid evolution of handheld and laptop devices makes it difficult for IR managers to control and support the increasing variety of equipment. Therefore, technologies

must be adopted cautiously until their capabilities are well understood.

eXtensible Markup Language

XML, eXtensible Markup Language, is promoted as having the potential to enable disparate computer systems to exchange data more easily. One of the most aggressive adopters has been the U.S. Department of Justice in the Justice XML Standard Initiative. This initiative will help law enforcement agencies better identify and retrieve information about criminal suspects from federal, state, and local databases. However, the success of XML depends on standardizing data definitions among all the users of the data. Public entities will get the most benefit from the technology by leveraging and building upon standard XML vocabularies as they become more mature and more widely accepted.

Emerging Trends

These developments in IR technologies or management may have important implications for the state beyond the current biennium.

- *Open Source Software* – The key features of open source software are (1) the software is free, (2) the source code is available to be modified, and (3) the user community can support and contribute to developing the software. Open source software may save the state money in some applications, but it has some drawbacks. The chief disadvantage is that although an agency may modify the software to match its own unique business processes, once the software is modified from the community-supported standard, it is up to the agency to maintain the nonstandard code.
- *Biometric Authentication* – Biometric authentication systems have a device that scans and captures a sample of some personal characteristic such as a fingerprint, iris scan, or voice print. The system extracts unique key data from the sample and compares it with a previous sample from an individual. The system then determines if the new sample matches or does not match the original. Such systems are usually more secure and easier to use than

traditional identification and password schemes. Thus, they have considerable appeal in applications that require a high level of security. While the cost for such technology is declining rapidly, the field is still immature. Industry analysts recommend experimenting cautiously with the technology until it becomes mainstream.

- *Smart Cards* – Smart cards are devices like credit cards that have embedded computer chips and memory. A smart card contains data about a person that is protected by security and privacy features. Government agencies are beginning to use smart cards as a way to share employee data while keeping the data secure at the same time. Smart cards are widely used in Europe in both government and private sectors. Industry analysts predict a 30% increase in use of smart cards in the U.S. from 2002 to 2003.
- *Capability Maturity Model Integration* – Capability Maturity Model Integration (CMMI) is a methodology developed at Carnegie Mellon University for analyzing and improving an organization's processes. Its basic premise is that adhering to good processes results in good products. CMMI is being widely adopted in private and public sectors for improving management and control of IR projects.³
- *Voice over Internet Protocol* – Voice over Internet Protocol (VoIP) is technology that allows phone calls to be made over data networks. VoIP has the potential to reduce dependence on the commercial voice network and much of the hardware and cabling it requires. It will also reduce much of the maintenance personnel and training associated with the current voice network. VoIP is still a young technology and numerous obstacles must be overcome before it can be widely adopted.

APPENDICES

The following appendices supplement this report:

- *Appendix A* – Descriptions of working groups focusing on information resources issues.
- *Appendix B* – A report of agency compliance with continuing education requirements for information resources managers.
- *Appendix C* – A summary list of IR projects that are currently subject to review by the Quality Assurance Team.
- *Appendix D* – Awards and recognitions for state agency and university IR projects.

REFERENCES TO OTHER REPORTS

DIR and affiliated governance groups for which DIR provides administrative support produce several IR-related reports to the Legislature. These reports are cited extensively throughout this document and should be consulted for more details about the specific topic. The reports are listed in the following table.

Report	Group
<i>Status of the Plan for the State Government Telecommunications Network</i>	Telecommunications Planning and Oversight Council
<i>Digital Texas</i> , the biennial report on the use of GIS technology by state government	Texas Geographic Information Council
<i>TexasOnline 2002 Status Report: Progress and Efficiencies Gained</i>	TexasOnline Authority



PROGRESS TOWARD THE GOALS

In the 2001 State Strategic Plan, *Transforming Government through Information Resources Management: Great Expectations*, it is recognized that successful information resources managers must contend with competing demands of budgets, personnel, an increasingly Web-enabled public, the Legislature, public interest groups, and other agencies.

The plan presents a vision of transformation in the way that the state does business by providing greater electronic access to government services for the public and other agencies. The vision, goals, and objectives of the plan offer a strategy whereby state government can carry out its mission of providing efficient and accessible delivery of services and information to the people of Texas.

The 2001 State Strategic Plan set the following goals:

1. *Transformation of Government* – State government will leverage information resources to deliver services to citizens irrespective of government boundaries.
2. *Information Management Practices* – State government will enhance agencies' performance of their mandates and missions through the appropriate use of information resources.
3. *Stewardship of Information* – State government will ensure the privacy, security, integrity, and relevance of its data.
4. *Access and Participation* – Citizens will have access to multiple information technology channels to interact with Texas government entities.

These goals are supported with objectives and outcome measures to provide a benchmark for the state's efforts in information resources management. The broad goals, precise objectives, and explicit outcome measures help agencies shape their own information resources strategic plans and provide a basis for their budget requests to the Legislature.

This section reports the progress of state government in accomplishing the goals and objectives of the State Strategic Plan. The supporting information was collected from state agencies, their Web sites, and responses to a survey sent to 205 state information resources managers (IRMs). The 103 IRMs who responded to the survey represented 85% of the state government workforce.

GOAL 1 – TRANSFORMATION OF GOVERNMENT

Goal 1 calls for state government to leverage information resources to deliver services to citizens irrespective of government boundaries. The decentralized nature of IR administration among state agencies and across governmental jurisdictions presents challenges to state government's ability to effectively manage information resources. To accomplish the goal of transformation, a primary objective is for state agencies to pool resources and for state and local government entities to collaborate and work more efficiently.

1.1.

Objective 1 – State and local government entities work toward integrating and/or sharing data within and among different levels of government.

Integration of resources and collaboration among state agencies are achieved through the work of interagency task forces and working groups, the sharing or consolidation of resources to enhance efficiencies, and the sharing of data to enhance services.

1.1.1.

Outcome 1 – Cross-government or interagency initiatives, task forces, and working groups. There are more than 20 ongoing IR-related task forces, working groups, and standards bodies (see *Appendix A* for more information) in which 80% of reporting state agency IRMs participate. Most agency IRMs sit on three or more working groups. The

following table shows the level of IRM participation among the more active working groups:

Public Electronic Services On-the-Internet (PESO) Working Group	41%
State Agency Coordinating Council (SACC)	30%
Records Management Interagency Coordinating Council (RMICC)	30%
Small Agency Task Force	30%
Telecommunications Planning and Oversight Council (TPOC)	23%
West Texas Disaster Recovery and Operations Center (WTDROC)	23%
TexasOnline Authority	22%

1.1.2.

Outcome 2 – Reduction or elimination of overlapping services.

Ten percent of agencies reported eliminating programs or sharing resources to prevent duplication of services during the past two years. For example, the Department of Banking worked with the Savings and Loan Department and the Office of Consumer Credit to share document imaging services. Other examples include:

- The browser-based eligibility system component of the Texas Integrated Eligibility Redesign System (TIERS) integrates all Department of Human Services programs into one database.
- The State of Texas Assistance and Referral System (STARS) allows citizens to self-screen for potential eligibility for programs provided by the Department of Human Services and other state agencies.

1.1.3.

Outcome 3 – Interagency data-sharing activities. Agencies report on shared data initiatives and interagency contracts in their Agency Strategic Plans. Some of the more notable activities include the following:

- A third of state agencies surveyed reported participating in interagency data-sharing activities. The most common types of data sharing occurred among universities within a respective system and agencies interacting with TexasOnline.

- The Texas Geographic Information Council (TGIC) includes representatives from both state and regional government agencies. A primary purpose of TGIC is to gather and share geospatial data among state agencies and across governmental jurisdictions in order to promote statewide planning and policies.
- The Texas Justice Information Integration Initiative is an interagency group that produced a plan to foster cross-government sharing of criminal justice information within the state.⁴ The vision of this plan is to ensure the improved administration of justice through collaboration among state and local governmental entities to provide accurate, secure, and timely information to users in a format that is simple and useful.

1.2.

Objective 2 – Design and delivery of government services is coordinated among agencies and across different levels of government.

The state offers support to local and regional governments on information resources management by partnering with them on delivery of government services, primarily through TexasOnline, and by including them in statewide task forces and working groups.

1.2.1.

Outcome 1 – Cross-government or interagency initiatives, task forces, and working groups. Local and regional governments are represented on the Texas Geographic Information Council, the Telecommunications Planning and Oversight Council, and the TexasOnline Authority. The County Information Resources Agency participates in a number of state task forces and working groups. DIR's Program Management Office includes local governmental representation on its advisory committee.

In addition to the standing IR-related working groups, 21% of agency IRMs belong to more than 20 temporary groups tasked with specific deliverables. Included among the temporary groups are the Statewide Radio Task Force, the UETA (Uniform Electronic Transaction Act) Task Force, and

the HIPAA (Health Insurance Portability and Accountability Act) Local Codes Work Group.

1.2.2.

Outcome 2 – State, county, and municipal government participation in TexasOnline. It is TexasOnline policy to link to every state agency, county, or municipality with a Web site in order to provide the public with a one-stop shop of government information.

In 2000, TexasOnline's first year of providing transaction services to the public, six state agencies participated in its e-government initiatives. Within a year, the number of participating state agencies increased to ten. In addition to state agencies, a city and 28 counties offered services via TexasOnline in 2001. As of August 2002, 22 state agencies, 38 counties, and three cities provided transactional services via the portal.

1.2.3.

Outcome 3 – Services delivered through TexasOnline. TexasOnline began with four online services. By the end of 2001, the portal offered 19 different online services, with 31 services under development. By August 2002, the number of services offered on the portal more than doubled to 44.

1.3.

Objective 3 – State government executives support the growth of e-government initiatives.

Support for electronic government is evident in the growth of the number of services made available by agencies through TexasOnline.

1.3.1.

Outcome 1 – Opportunity proposals submitted to the TexasOnline Authority. Opportunity proposals are documents produced jointly by a vendor and government entity that detail anticipated use, development costs, and expected return on investment for a TexasOnline application. In 2000, TexasOnline received ten opportunity proposals. In 2001, 20 opportunity proposals were submitted.

GOAL 2 – INFORMATION MANAGEMENT PRACTICES

Goal 2 calls for state government to enhance agencies' performance of their mandates and missions with the appropriate use of information resources through best practices models for IR standards, rules, guidelines, procurement, security, management, and training.

2.1.

Objective 1 – State government entities will follow DIR rules and guidelines.

Under the Information Resources Management Act, DIR publishes rules and guidelines that support technical interoperability among state agencies.⁵ Rules establish standard practices that agencies are required to implement in their use of information technology, while guidelines assist agencies in effectively managing IR projects.

2.1.1.

Outcome 1 – Compliance with statewide IR rules. Agencies reported the following rates of compliance with statewide IR rules and standards:

IRM Continuing Education rules	95%
Software Audit/Software Portfolio Management rules	87%
State Web Site rules	83%
Information Security Standards (2000)	79%

2.1.2.

Outcome 2 – Adopting common architectures and directory services. Agencies reported compliance with these standards at the following rates:

DIR Internet Standards	86%
E-Government Standards	35%
Security Standards	34%
Architecture Framework for IR Management (AFIRM)	28%

2.1.3.

Outcome 3 – Continuing education. DIR has established technology training for IRMs to enhance their knowledge of current technology and to develop proficiencies in key

competency areas. IRMs met DIR's continuing education guidelines at the following rates for fiscal years 2000–2002:

FY 2000	79.0%
FY 2001	97.5%
FY 2002	94.5%

2.2.

Objective 2 – State government entities will apply IT best practices.

Rules and guidelines established by DIR are designed to promote best practices for IR project management.

2.2.1.

Outcome 1 – Software Engineering Institute specifications. Agencies reported using guidelines specified by the Software Engineering Institute (SEI):

SEI Guidelines	56%
Risk Management	45%
Project Planning	38%
Integrated Project Management	36%
Project Monitoring and Control	33%

2.2.2.

Outcome 2 – Project Management Institute specifications.

Agencies reported using guidelines specified by the Project Management Institute (PMI):

PMI Guidelines	53%
Quality Management	50%
Scope Management	47%
Time Management	44%
Risk Management	41%

2.3.

Objective 3 – State government will employ information technology to meet citizen needs where appropriate.

The state recognizes the importance of information technology by fostering IRM representation in management decision making and by providing services to Texas citizens via technology.

2.3.1.

Outcome 1 – IRMs on agency executive committees.

Fifty-four percent of IRMs currently serve on their agencies' executive committee.

2.3.2.

Outcome 2 – IRMs involved in production of the Agency Strategic Plans.

Eighty-nine percent of IRMs are directly involved in the production of their agencies' strategic plan.

2.3.3.

Outcome 3 – Agency services offered online to

Internet-enabled citizens. Texas law requires every state agency to establish a Web presence. Seventy-five percent of state agencies report that, at the very least, detailed information about their agency's rules, services, and programs can be accessed on their Web sites by the general public. Forty-eight percent of agency Web sites offer e-mail or Web inquiries. Thirty-one percent of agencies report citizens can arrange to conduct transactions online such as payments for fines, parking tickets, event reservations, licenses, or subscriptions.

GOAL 3 – STEWARDSHIP OF INFORMATION

As Internet use increases, concerns about privacy and security also increase. It is an important role of government to ensure that personal information about citizens remains private and secure.

3.1.

Objective 1 – State government entities will have policies on data security and privacy.

Agencies secure online transactions by employing reliable transaction technology and by informing citizens of policies and procedures safeguarding their privacy.

3.1.1.

Outcome 1 – Security policies accessible from the home page of agency Web sites.

A comprehensive evaluation of state Web sites revealed 27% of agency Web sites have a clearly stated security policy.

3.1.2.

Outcome 2 – Privacy policy accessible from the home page of agency Web sites. More than 70% of state agencies have a link to their privacy policy on their home page.

3.1.3.

Outcome 3 – Public information policy accessible from the main page of agency Web sites. Thirty-eight percent of agencies have a link to their public information policy regarding Open Records issues on their home page.

3.2.

Objective 2 – State government will collect only information needed for government operations.

Agencies will implement and enforce comprehensive data collection standards and periodically review them to ensure compliance and efficiency.

3.2.1.

Outcome 1 – Identifying data needed and relevance of data collected. Agencies reported the following data collection practices:

Employ data collection standards	59%
Regularly review relevance of data collected	63%
Review data collection standards annually	13%
Review data collection standards biennially	14%

3.3.

Objective 3 – State government entities will ensure the long-term viability of records.

The Information Resources Management Act states that “information and information resources possessed by agencies of state government are strategic assets belonging to the residents of this state that must be managed as valuable state resources.” Additionally, state law requires information retained by the state that is not specifically exempted from disclosure to be made available to the public upon request.⁶ Because of this, agencies must establish procedures to manage and maintain electronic records.

3.3.1.

Outcome 1 – Compliance with statewide records retention policies. Eighty percent of state agencies have formal, written procedures for managing records in a variety of media, and 78% have policies in place to dispose of records according to records retention schedules.

3.4.

Objective 4 – State government entities will follow statewide security guidelines.

To ensure the security of government and citizen electronic information, agencies must follow procedures to protect the integrity of information technology hardware and software.

3.4.1.

Outcome 1 – Reporting security incidents. In 2000, an average of 147 agencies submitted monthly incident reports.

3.4.2.

Outcome 2 – Vulnerability assessments. Forty vulnerability assessments were performed in 2000.

3.4.3.

Outcome 3 – Outages due to security-related problems. In 2000, an average of 15 outages per month due to Web site compromises or Denial of Service incidents were reported.

3.4.4.

Outcome 4 – Security breaches. In 2000, agencies reported an average of 825 security breaches per month.

GOAL 4 – ACCESS AND PARTICIPATION

Texas recognizes the importance of citizen involvement and input into the design and use of electronic government services.

4.1.

Objective 4.1 – State government will educate the public about access to online public services.

The state must advocate e-government services to both the public and to local and regional governments.

4.1.1.

Outcome 1 – Public awareness of current electronic government services. In June 2000, DIR sponsored a study by the Telecommunications and Information Policy Institute at the University of Texas on how the public views the current online services. That study discovered that 81% of Texans believe that the Internet could make government more available.⁷

4.1.2.

Outcome 2 – Education and awareness programs conducted by state, county, and municipal government entities. More than 70% of state agencies reported using a variety of education and marketing activities to increase public awareness of their online services. For example, TexasOnline distributed public service announcements to radio and television markets statewide, conducted focus group testing, coordinated press conferences and press releases, and conducted direct outreach.

4.2.

Objective 2 – State government will increase access to e-government services in all Texas communities.

For online services to be successful, they must be available to citizens throughout the state. State government plays an important role in promoting e-government, both statewide and locally, by partnering with city and county governments.

4.2.1.

Outcome 1 – Cities and counties with Web sites.

Thirty-four percent of the state's 1,202 municipalities and 39% of the state's 254 counties have a Web site. Several Texas cities and counties provide online services through TexasOnline.

4.2.2.

Outcome 2 – Public schools provide access to electronic services. Every one of the state's 7,519 K-12 campuses has at least one Internet connection and 84% report they have Internet access in every classroom on every campus. At the end of the 2001–2002 school year, 72% of campuses had access to online services through the Texas Library Connection (TLC). Additional campuses will have the opportunity to enroll in TLC during the 2002–2003 school year.

4.2.3.

Outcome 3 – Public libraries provide access to electronic services. In 2001, 97% of the state's 546 main public libraries had Internet access—a slight increase over 2000, when 95% of public libraries reported they were connected to the Internet.

4.2.4

Outcome 4 – Visitors to state Web sites. In 2000, the average number of visitors to a selected sample of more than 100 state agency Web sites exceeded 77.2 million per month. In 2001, the average number of visitors to the same sample of Web sites was just under 120 million per month—an increase of 55%. When TexasOnline was launched in 2000, it received approximately 40,000 visits per month. Now it receives roughly 900,000 visits monthly.

4.3.

Objective 3 – The design of online services will meet citizen needs and expectations.

To succeed, state government must provide citizens with online services that are reliable, easy to use, and adaptable to the changing needs of the public.

4.3.1.

Outcome 1 – Usability. State agencies reported testing the usability of their online services through the following methods:

Ad hoc testing	24%
One-on-one testing	24%
Focus group testing	17%
Usability lab testing	6%

4.3.2.

Outcome 2 – Satisfaction with online government services.

Within the last two years, 37% of reporting state agencies have conducted surveys to measure the level of satisfaction among online service users. Eighteen agencies reported gathering data on the satisfaction level of online visitors, with an average of 80% of public visitors expressing satisfaction with their online experience.

4.3.3.

Outcome 3 – Government information technology channels. Government has used information technology to enhance the availability of public hearings, board meetings, training, agency news and information, and internal communications. Agencies reported using the following methods:

Webcasting	28%
Online discussion forums	21%
E-mail	78%
Mail list servers	35%
Videoconferencing	31%
Audioconferencing	31%

4.3.4.

Outcome 4 – Access to information and services in Spanish. An examination of all state agency Web sites in 2002 discovered that fewer than 6% of agency sites have information available in Spanish on the home page.

4.4.

Objective 4 – Citizens have the opportunity to provide input to new e-government programs.

Agencies should take advantage of the online capabilities of e-government to not only provide services, but to allow citizen input into online government services.

4.4.1.

Outcome 1 – Online applications developed with end-user input.

Close to 60% of state agencies have formal procedures, such as surveys, interviews, and focus groups, to gather information from the public in order to gain end-user input into online application development.

4.4.2.

Outcome 2 – Feedback from end users about online government services. Agencies use a variety of methods for their customers to provide them with feedback on online services. The methods agencies use to solicit feedback include:

Offer a Web link for e-mail feedback	61%
Offer a Web-based feedback form	52%
Solicit feedback via targeted e-mail	29%

Every agency service provided through TexasOnline allows for customers to provide feedback via a Web-based form.



EXPENDITURES

...[9/11] will certainly focus managers and business leaders on business continuance, risk management and disaster recovery. Most enterprises have underinvested in these areas and will be forced to funnel at least part of their IT budgets in the coming year into enhancing these areas.

— Gartner Group⁸

INDUSTRY TRENDS

Capital spending is down

U.S. corporations are spending more than half of their capital investment dollars on information resources.⁹ Gartner Group reports that for all industries, although IR spending has been greater than planned in each of the last five years, revenue shortfalls during 2002 have affected IR capital budgets more than operating budgets.¹⁰

According to a recent *CIO Magazine* survey on IT planning, almost 60% of technology executives believe IT spending will increase by the first half of 2003. At the same time, these executives ranked their top methods for reducing expenses:¹¹

Conducting tougher negotiations with vendors	51%
Postponing or reducing funding for IT projects	50%
Reducing headcount/IT staff	41%
Consolidating technology vendors/products	40%

Approximately 18% said their spending had not slowed down in spite of the adverse economy.¹² Howard A. Rubin, executive vice president at META Group, notes that some corporations have actually increased IR spending to take advantage of the current buyer's market during the economic slowdown.¹³ *Government Executive Magazine* reports that the federal government is proposing the biggest increase in IT spending in at least five years.¹⁴

Infrastructure is the first priority

The *CIO Magazine* survey on IT planning found that 45% of technology executives said they plan to accelerate spending

on infrastructure upgrades, such as servers; and 29% plan to increase desktop upgrades and replacement expenditures.

Survey respondents ranked their post-recession priorities:¹⁵

Integrating systems and processes	57%
External customer service/relationship management	45%
Enhancing/enabling e-commerce	35%
Implementing data security and privacy measures	32%

META Group's Rubin says that he sees infrastructure consolidation as a popular trend.¹⁶

Staffing is still critically important

In a 2002 update on IT staffing in *CIO Magazine*, companies reported having less difficulty hiring IR personnel in July 2002 than at the beginning of the year:¹⁷

July 2002	29%
January 2002	37%
July 2001	47%

The same survey showed that difficulty retaining IR personnel has eased since 2001:

July 2002	18%
January 2002	17%
July 2001	54%

CIOs note that the use of monetary benefits as an incentive to sign on or stay at organizations is used less frequently today than six months ago, with only 11% of respondents reporting the use of hiring bonuses compared to 16% in January. Application development and project management remained the skills most in demand; while the need for networking, help desk, and security skills is on the rise.

EXPENDITURES

Our recent survey of compensation managers indicates (contrary to mass media reports) that base salaries for 2001 remained flat. Merit increases to base salaries dropped to 5%, from 10% to 15% last year. Poor Global 2000 performance lessened total IT cash compensation, mainly because of fewer available bonus funds. Salary increases for individuals with key skills (senior infrastructure and Internet positions) bucked this trend, averaging 11%. Despite layoffs from technology and sell-side firms, IT staff demand remains stable, with an uptick in demand expected to impact users toward year-end 2002 as the economy recovers.

Bottom Line: The recession has given organizations a respite from spiraling IT salaries, but users should expect demand for key skills to once again outpace supply as the economy recovers, maintaining long-term pressure on IT salaries.

— META Group¹⁸

STATE TRENDS

For the first time, the comparative analyses of IR spending trends offered in this report are based on data from the Office of the Comptroller.

Exhibit A shows categories of IR expenditures for fiscal years 1998–2002. Final information on IR staff salaries for fiscal 2002 was not available at time of this report.

Exhibit B shows selected expenditure categories as a percent of total IR expenditures for fiscal years 1998–2002. Several categories are combined for the purpose of this exhibit:

- *Hardware* – combines the Computer Hardware and Hardware Maintenance categories.
- *Software* – combines the Software and Software Maintenance categories.
- *Telecommunications* – combines the Data Telecommunications, Voice Telecommunications, Telecommunications Hardware, and Telecommunications Maintenance categories.

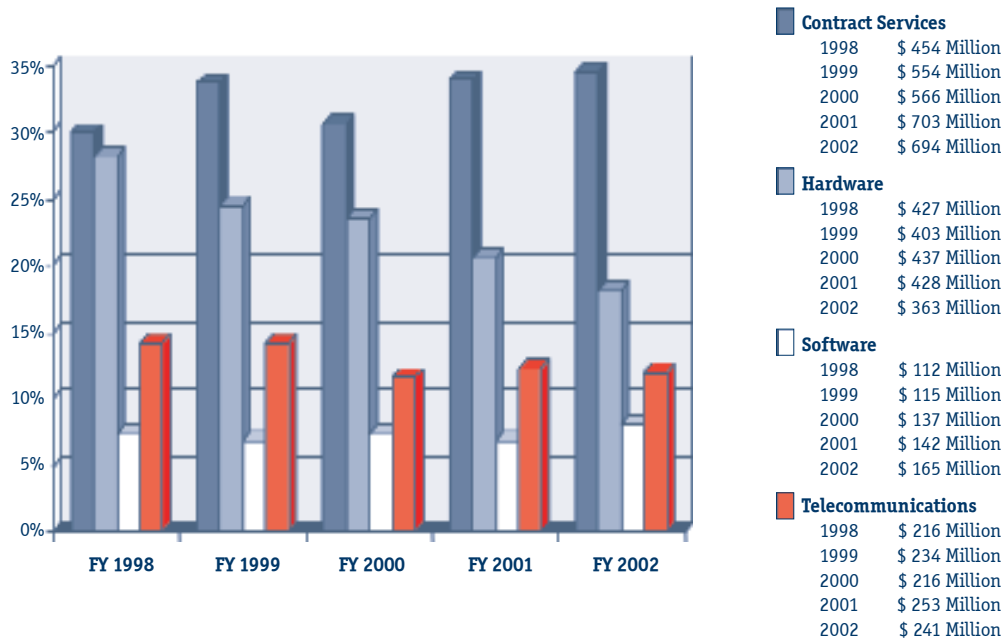
In both exhibits, *Contract Services* includes expenditures for both consultant and non-consultant services.

Exhibit A. IR Expenditures by Category for Fiscal 1998–2002

EXPENSE CATEGORY	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
IR Staff Salaries	194,119,490	206,209,251	381,726,684	425,553,053	417,568,435*
IR Training	41,517,209	49,970,474	40,749,027	45,875,683	43,493,734
Supplies	74,559,727	86,214,372	77,906,933	78,394,278	90,326,521
Contract Services	454,338,734	553,969,270	565,853,488	703,068,649	693,557,463
Software Maintenance	28,411,296	36,542,685	40,550,144	47,742,243	54,712,375
Hardware Maintenance	42,247,105	42,746,901	42,830,222	40,814,369	45,954,205
Voice Telecom	147,963,053	168,983,428	151,851,949	174,687,955	170,017,699
Data Telecom	15,748,699	22,680,523	18,917,076	36,315,680	33,462,866
Telecom Maintenance	7,732,864	8,384,887	10,109,087	10,416,210	8,364,858
Telecom Hardware	44,099,352	33,548,471	34,639,734	31,615,883	28,706,375
Computer Hardware	384,283,616	360,713,270	393,708,219	386,877,466	316,984,699
Software	83,138,533	78,113,937	96,458,878	94,311,206	109,947,430
Total Expenditures	\$1,518,159,678	\$1,648,077,469	\$1,855,301,441	\$2,075,672,675	\$2,013,096,660

* Fiscal 2002 Staff Salaries are estimated

Source: Office of the Comptroller of Texas, October 2002

Exhibit B. Selected Expenditure Categories as a Percentage of Total IR Expenditures for Fiscal 1998–2002

Source: Office of the Comptroller of Texas, October 2002



LEGISLATIVE ISSUES

As detailed in the *Progress toward the Goals* section, Texas agencies and universities continue to make significant improvements in efficiency and effectiveness of IR management. In particular, agencies are seeking ways to share resources and development efforts to reduce duplicate systems and data collection. Such cooperation not only reduces expenses for developing and maintaining systems, but provides the potential to make agencies' services easier for the public to use and to reduce data errors.

As resources are shared, however, new risks have emerged. Agencies increasingly rely on shared systems to provide mission-critical services. Disruption of IR systems at one agency may affect other agencies that rely on those systems. Thus, continuity planning and disaster recovery have become fundamental and urgent concerns that must be addressed in IR planning and management.

As a result of such concerns, the issues and recommendations presented focus primarily on developing and protecting the state's IR infrastructure and on preserving the state's electronic records. The issues are numbered for reference.

- *Issue 1* – E-Government Infrastructure
- *Issue 2* – Infrastructure Security
- *Issue 3* – Investigation and Prosecution of Computer Crime
- *Issue 4* – Rural Access to Telecommunications Services
- *Issue 5* – Disaster Recovery and Business Continuity Planning
- *Issue 6* – Consolidation of IR Management for Small Agencies
- *Issue 7* – E-Mail Records Management

ISSUE 1 – E-GOVERNMENT INFRASTRUCTURE

Background

The Internet provides opportunities for government to easily share information with and deliver services to the public. The success of TexasOnline, the state's Internet portal, is dependent on public adoption. Educating the public about the services available on TexasOnline should be a state priority.

The *TexasOnline 2002 Status Report* addresses a number of issues for furthering e-government in Texas, the most pressing of which is funding.¹⁹ While online transactions can usually be conducted at a lower cost than traditional transactions, there is a cost to develop and maintain these applications and to support the infrastructure used to deliver them.

TexasOnline is built on a self-supporting model that provides the infrastructure for state and local government to interact with citizens and businesses via the Internet. Costs are recovered through a variety of methods, with convenience fees (fees paid by users of the service) being the primary method of revenue generation. However, many services do not lend themselves to charging customers for their use. These include applications for welfare and unemployment assistance and requests for information about emergency services.

Analysis

Currently, the state receives 10% of the gross revenue earned from state agency services provided on TexasOnline. The state's private partner, BearingPoint, Inc., plans to recover the costs of its infrastructure investment through a variety of revenue sources including convenience fees, subscription fees, and premium services. After BearingPoint recovers its investment, the state will receive 50% of all net revenue generated by the portal.

One method to address the funding issue of electronic government is to reinvest state revenues from TexasOnline back into the portal. The state's current share of revenue is deposited into the General Revenue Fund. Reinvesting the state's revenue back into TexasOnline would not only accelerate the private partner's investment recovery, but would accelerate the date that the state will own the infrastructure and receive half of the net revenue.

There are also a number of public services, such as unemployment assistance, that should be offered at no charge to users. Consideration should be given to reinvesting part of the funds generated through other services on TexasOnline into the development and maintenance of these types of applications.

Agencies that provide services through TexasOnline could also benefit by being able to reduce charges to their customers. The TexasOnline feasibility report (November 2000) noted:

The funding structure is not designed to create a large pool of revenue for the state, but rather simply to recover the costs for operations and maintenance, and eventually to provide some additional resources for providing more services online. Part of the structure of agreements with individual agencies is the ability to reconsider the convenience fees or other funding methods over time, lowering or removing the charges based on the amount of money being generated.²⁰

Thus, each agency with an application on TexasOnline is asked to benchmark its online transaction cost against conventional costs. Where online transaction costs are lower, agencies can "buy down" the convenience fees for their customers.

Recommendations for Issue 1

It is recommended that the Legislature:

1. Reinvest revenues generated through TexasOnline back into the portal for the TexasOnline Authority to use in the following manner:

- Developing and maintaining public service applications (applications that don't impose a convenience fee).
- Decreasing existing user and hosting fees.
- Accelerating payback so that the state can own the infrastructure earlier and receive 50% of net revenue.
- Educating the underserved population on the beneficial uses of the Internet and the services available on TexasOnline.

2. Require agencies to analyze cost efficiencies associated with online transactions and to reinvest those savings to "buy down" the citizens' convenience fees and subscription fees.

3. Require the TexasOnline Authority and DIR's TexasOnline Division to ensure that all economies associated with scale and experience are applied to the delivery of TexasOnline.

ISSUE 2 – INFRASTRUCTURE SECURITY

Background

The failure of key systems and resources, such as energy, water, transportation, and healthcare, would have a devastating impact on national security, economic security, and/or public health and safety. Although most of these services are provided by the private sector, some are public entities, and many are regulated by state agencies.

Critical infrastructures are threatened in two ways: physical attacks and cyber attacks. Physical attacks are directed against the physical components of infrastructures. Cyber attacks are directed against the electronic information or communication components that control the infrastructure.

Analysis

Operations of all of the infrastructure sectors increasingly rely on computer-controlled systems and interdependent networks. However, planning for security has traditionally focused on computer systems, applications, and databases. In today's network environment, it is equally important to safeguard the telecommunications links that permit the

sharing of electronic data among state agencies and with the government's external partners.

Both government and private sectors are enhancing network security, not only with new technology, but with new approaches as well. One such approach is the removal of information about critical infrastructure, such as maps and schematics, from the Internet. Organizations are also beginning to perform background checks when hiring personnel who manage networks to ensure that they have no criminal history.

Companies are increasingly implementing security architectures, intrusion detection, and recovery systems. Even so, American businesses are still only spending a small percentage of their information technology budget on security measures. Many companies are unprepared for even minor virus-oriented attacks.²¹

Further complicating the situation is the fact that federal and state Freedom of Information Acts (FOIAs) inhibit sharing security information between private industry and government entities. Private entities are concerned that governments cannot assure that sensitive information supplied by the entities will not fall into inappropriate hands.

Because of their concerns, private-sector entities may not report to the government valuable information necessary to fully analyze vulnerabilities and risks to critical national and local interests. This will likely remain the case until the government can offer such assurances of protection from disclosure.²²

To help governments address this issue, the Association of Metropolitan Water Agencies has published a guide to state FOIA statutes, including model statutes that provide for exceptions for security information.²³

Recommendations for Issue 2

It is recommended that the Legislature:

1. Create and fund a centralized coordination and communications center to provide facilities and resources for sharing information among private and public entities about security threats to infrastructure and computer systems.
2. Determine the feasibility of creating or using an existing Computer Emergency Response Team.
3. Require that every state agency and state-regulated critical infrastructure owner or operator appoint a qualified systems security point of contact. The person in this position is ultimately responsible for:
 - Monitoring the security status of networks and servers.
 - Sending all threat information to the centralized coordination and communications center for information assurance and sharing.
4. Develop standards for interoperability with regard to the efficient transfer of threat information.
5. Enable state entities to perform criminal background checks through the Department of Public Safety for prospective personnel who manage sensitive or private data, state networks, and/or IR security functions.

It is recommended that DIR:

1. Convene an interagency panel to recommend guidelines for selecting state information that should not be available on the Web.

ISSUE 3 – INVESTIGATION AND PROSECUTION OF COMPUTER CRIME

Background

Enforcement of laws against computer crime at the state level is difficult because of a lack of trained computer forensics personnel and the legal resources to prosecute computer crime. Many computer crimes are not reported and those that are reported are seldom investigated. Even fewer are prosecuted. Without adequate enforcement, there is no effective deterrent to criminals except agency security processes and systems.

Analysis

Prosecuting computer crime requires experts trained in both law enforcement and computer forensics. Computer forensics is the employment of a set of predefined procedures to thoroughly examine a computer system using software and tools to extract and preserve evidence of criminal activity.²⁴ Forensic procedures require considerable training and special care to preserve the evidence.

A widely-known expert in the field notes:²⁵

A knowledgeable computer forensics professional will ensure that a subject computer system is carefully handled in order that:

- No possible evidence is damaged, destroyed, or otherwise compromised by the procedures used to investigate the computer.
- No possible computer virus is introduced to a subject computer during the analysis process.
- Extracted and possibly relevant evidence is properly handled and protected from later mechanical or electromagnetic damage.
- A continuing chain of custody is established and maintained.
- Business operations are affected for a limited amount of time, if at all.
- Any client-attorney information that is inadvertently acquired during a forensic exploration is ethically and legally respected and not divulged.

Because computer forensics is such a technologically detailed discipline, it requires a specially trained staff. In addition, the rapid pace of technological evolution requires the personnel to train continually and relentlessly. As a result, computer forensic experts are not common.

The Department of Public Safety (DPS) handles all computer crimes reported directly to DPS and to county and local law enforcement agencies, along with computer incidents referred by the DIR Security Office. DPS currently has four fully trained computer forensics specialists and one full-time lab technician. However, the criminal investigators report to different commanders, so there is no command structure focusing solely on computer crime. These employees handle all computer crime, in addition to non-computer criminal investigations.

In comparison, the State of Washington's King County (Seattle), with a population of 1.7 million, has one sergeant and seven detectives to investigate fraud and computer crime.²⁶

Recommendations for Issue 3

It is recommended that the Legislature:

1. Emphasize prosecution of crimes against state networks and computer systems at the jurisdiction level (state, county, city).
2. Fund investigative entities' efforts to
 - Investigate crimes against state networks and computer systems.
 - Provide the necessary training and education for their personnel who handle computer crime.

ISSUE 4 – RURAL ACCESS TO TELECOMMUNICATIONS SERVICES

Background

Because rural communities are small markets, providers of broadband telecommunications services (defined as 200 Kbps or higher) and Internet service providers may have to

charge much higher rates for telecommunications services in rural areas than they do in metropolitan markets. Deregulation of the local market, begun in 1995, has seen limited success in driving broadband services to rural areas. New carriers have generally concentrated on providing services in densely populated urban areas.

Broadband service is available statewide, but entities that are not eligible for special educational discounts, incentive deregulation rate discounts, or TEX-AN service usually cannot afford it. This digital divide affects the ability of some rural citizens to participate in local and state government discussions and services. The success of some small- to medium-sized businesses is affected by their access to broadband technology.

Analysis

TEX-AN, the state's consolidated telecommunications system, has often been viewed as an anchor tenant of broadband services in rural Texas. To serve state agencies' needs, TEX-AN has contracted for equal rates statewide. TEX-AN is able to accomplish this through the volume purchasing power of state government.

Although TEX-AN is capable of providing broadband services at discounted rates regardless of the location, service is restricted by legislative and policy constraints. Thus, residents, businesses, and community networks in many rural areas that cannot afford broadband services do not have access to state services that are offered through TEX-AN in their community. For example, the community networks funded by the Telecommunications Infrastructure Fund cannot use TEX-AN if non-eligible entities are part of the network. In addition, community networks are not eligible for funding from the federal e-Rate program. These factors may lead to inefficient duplication of state-funded technology and services throughout rural regions of Texas.

The role of TEX-AN in deploying broadband services for rural Texas is being reviewed by interim legislative committees. The Legislature has previously allowed TEX-AN to serve private universities that receive federal or state funds for distance learning. There is also a need to allow TEX-AN to

partner with service providers from the private sector to provide broadband services to the general public in rural communities and to allow DIR to directly bill the service providers for TEX-AN services.

Language in the Texas Government Code states:²⁷

[I]t is the policy of this state that a state agency or unit of state government may not provide telecommunications products or services to the general public in competition with private enterprise *unless there is a finding that providing the products or services is in the public interest.* [Emphasis added.]

It is not clear from this language if TEX-AN should provide these services, nor how and by whom a finding is determined to be in the public interest.

Two points must be considered when proposing that TEX-AN provide for the needs of rural Texas. First, existing carriers will have concerns about the state network becoming a competitor by providing services to private entities. Second, the state may also fall under FCC regulation if serving private entities causes the state to be treated as a regulated carrier. Thus, the use of TEX-AN by private entities should be considered only for rural communities and only in exceptional instances where no alternative can be found. An oversight process acceptable to the carriers should be implemented to guide the process.

Recommendation for Issue 4

It is recommended that the Legislature:

1. Provide a way for rural communities that are unable to obtain advanced telecommunications services to use TEX-AN. This may be accomplished by either:
 - Revising language in the Texas Government Code to clarify TEX-AN's role in providing broadband services to rural areas by adding a more detailed description of "a finding that providing the products or services is in the public interest," describing the mechanism for initiating such a finding, and designating the entity that would review such a finding.

- Giving the Public Utility Commission of Texas (PUC) the responsibility to determine whether a rural community that is unable to obtain advanced telecommunications services from its local incumbent exchange carrier or another provider of advanced services should have access to TEX-AN. For example, legislation could be enacted giving the PUC authority to grant this access, in cooperation with the Telecommunications Planning and Oversight Council, when petitioned by a rural community that has no other alternatives.

ISSUE 5 – DISASTER RECOVERY AND BUSINESS CONTINUITY PLANNING

Background

The September 11, 2001, disasters in New York City, Pennsylvania, and Washington, D.C., brought significant attention to and examination of the effectiveness of government disaster recovery and business continuity planning (BCP) methodologies.

Analysis

A recently chartered State Agency Disaster Recovery Workgroup conducted a survey of the state's information resources managers in June 2002. The group identified five issues currently facing the state:

1. *Vulnerabilities of certain technologies* – The state's business is critically tied to the use of new technologies. Disaster recovery activities have traditionally focused largely on the restoration of large data centers and mainframe resources. Some critical data on distributed computing devices and desktops may be largely irretrievable if a public building were to be destroyed, possibly impairing restoration of data and thus service to Texans.
2. *Increased constituent demand for constant online access* – Demand for high-availability technology has dramatically increased as a result of growing constituent expectations of 24/7 electronic access to state government. Customer reliance on public entities' online services will likely

increase following a disaster. The public's need for constant online access via high-availability technologies may not be universally met following a large multi-agency or multi-campus disaster.

3. *Fragmented recovery planning and funding* – Disaster recovery planning and funding activities are individually conducted by public entities with no coordinated effort at the statewide level. Recovering from a large disaster will be difficult unless clear recovery priorities are established at a statewide level. Such a priority list is needed whether the state establishes multi-agency recovery centers or whether public entities continue to use commercial disaster recovery vendors' recovery sites.
4. *Dissimilar computer resources* – The financial viability and ultimate success of shared recovery/testing centers would be greatly enhanced if state agencies and universities used a common computing architecture. Working toward more commonality would enable multi-agency efforts to share disaster recovery resources.
5. *Need for statewide business continuity planning* – Business continuity planning is not an IT function; IT disaster recovery planning is a subset of a more global BCP implementation. Unless there is a concerted effort to develop effective business continuity plans in each agency and institution of higher education, all of the money and efforts expended to protect state IT resources will only result in restoring a portion of an operational state government following a large disaster.

Recommendations for Issue 5

The Legislature should consider a wide-ranging initiative to substantially change the way Texas handles and funds the hundreds of individual disaster recovery programs under its purview and establish how the state would continue its business operations should a large disaster occur.

It is recommended that the Legislature:

1. Create an interagency disaster recovery strategy team to review current disaster recovery and business continuity

planning, testing, and funding across the state. The team would:

- Focus on possible alternative methods of disaster recovery.
- Examine expenditures for contracted disaster recovery services and coverage and determine what state-based solutions exist or may be created.
- Develop a comprehensive proposal that includes a budget to put the required disaster recovery and testing infrastructure in place, and develop an initial multi-year plan whereby interested public entities would provide a share of ongoing funding to participate in one or more of the consolidated disaster recovery sites.

2. Require agencies to update statewide technical and architectural standards in cooperation with DIR with a goal of transitioning existing platforms to these standards.
3. Authorize DIR or other leadership offices to establish clear priorities, by application or by function, for what needs to be recovered following a multi-agency or multi-campus disaster.
4. Assign responsibility and funding to a single state government entity, such as the State Office of Risk Management, to lead, provide guidance, and establish statewide requirements for the state's public entities to develop business continuity plans.
5. Require state agencies to include telecommunications in statewide disaster recovery planning efforts.
6. Designate and fund a coordinating agency to receive and review agencies' disaster recovery plans.

ISSUE 6 – CONSOLIDATION OF IR MANAGEMENT FOR SMALL AGENCIES

Background

Most small agencies frequently cannot afford full-time information resources staff to support all of their IR

management tasks. This lack of dedicated staff can result in security breaches and potentially poor service to agency personnel and state citizens. This issue was raised in the Comptroller's *e-Texas Report*.²⁸ However, with the increasing network security risks, improving IR services to small agencies has taken on new urgency.

Analysis

The IR Management Act requires all agencies to have an information resources manager and prepare Biennial Operating Plans and Information Resources Strategic Plans.²⁹ IRMs are also required to follow DIR's rules regarding security, access, and general performance, and they must budget for and administer their own IR services.

In some small agencies, the Executive Director, Chief Operating Officer, or other function handles the IRM responsibilities. This usually means IR support becomes a secondary consideration to the employee's primary job. In some cases, IR security and support are outsourced to larger agencies or to third parties. For agencies without such options, training in critical areas such as IR security and technology planning is often neglected or ignored entirely.

Gartner Group suggests that, "... at least 80% of enterprises with fewer than 300 users will be able to cut the cost for implementing electronic workplace technology by outsourcing most computer-related aspects of their strategy."³⁰ The Statewide Information Technology Security Assessment, conducted in fiscal 2001, recommended that the state consolidate the Internet-based systems of some small state agencies within a single centralized operations center.³¹

State government loses economies of scale by requiring small agencies to manage their own IR services. Small agencies' employees cannot get the same level of basic IR support as large agencies because small agencies cannot afford specialized support personnel. Most of the advanced benefits of economies of scale are simply unavailable to small agencies unless they outsource IR support to another agency or a third-party provider.

Software asset management varies greatly among agencies. Failure to effectively manage software licenses creates liabilities that may cost the state millions of dollars, and has resulted in severe interruption of services due to IR failures.

Network security is an increasingly difficult technical function. It is almost impossible for IRMs to perform IR security part-time in addition to other IR support and agency duties. Lack of structured agency security policies results in critical security functions that are often inadequate or missing entirely. This creates numerous latent points of failure for hackers and terrorists to exploit.

DIR's Security Office works with numerous small agency IRMs who, in general, do not have adequate and ongoing training to be well-informed security administrators. DIR processes monthly security reports and monitors separate, potential points of failure for each of the small agencies that have their own security functions. Furthermore, each agency must expend additional funds for its own security hardware and software even though the smallest firewall installation is sufficient for several small agencies.

Recommendations for Issue 6

The base IR functions of most small agencies should be consolidated into a single IR department or service provider. This move will require changes to current IRM statutes and other state code.

It is recommended that the Legislature:

1. Establish criteria for including small agencies in the consolidation of base IR services and mandate that small agencies' IR services be consolidated under a single service provider.
2. Appoint an information resources manager for the consolidated service group.
3. Establish a working group that includes small agencies to ensure objectives are being met.

4. Allocate funding from affected agencies' IR budgets to support the services.

ISSUE 7 – E-MAIL RECORDS MANAGEMENT

Background

The popularity of electronic government is causing explosive growth in the number of official state records stored in electronic form. Of particular concern is the growth in the use of electronic messaging systems for conducting state business and documenting decisions; these messages must be managed according to state records management rules. However, IRMs and records managers are confronted with overwhelming challenges due to the nature of electronic messaging technology and the sheer volume of records produced. Keeping records past the required retention period increases the cost to manage and retrieve the data over time and increases an agency's vulnerability to expensive legal discovery and public information requests.

Analysis

E-mail users receive, on average, 70 e-mail messages a day. According to Gartner Group, mailbox management tasks such as sorting, filing, and deleting messages can take up to an hour and a half a day per employee.³² How and where e-mail messages are stored affects the ability of IR staff and records management staff to manage e-mail records. A recent study indicated that only 49% of the organizations surveyed had established e-mail retention policies, and further, 41% of users ignored the established policies.³³ Thus, agency e-mail records may be destroyed before their legal retention periods have been reached or, conversely, kept far longer than necessary.

Each state agency is responsible for managing its own e-mail system and e-mail messages. However, relying on users to manage their e-mail records according to retention requirements has not proven to be a workable solution. Users may delete messages that should be kept, or may archive e-mail that then has to be restored. While it may be possible to restore an archived message from backup tapes, it is usually a time-consuming and expensive process.

One technique for managing such records better is to use automatic classification software to sort records into appropriate categories; however, no software exists today that works with all e-mail packages. Multiple commercial e-mail systems, each with its own technological traits, are used by agencies. Using a single e-mail system throughout state government could simplify maintenance for e-mail systems and vastly improve management of e-mail records.

The volume of electronic information continues to increase and the number and size of e-mail messages are predicted to rise at a compounded annual growth rate of 40% through 2005.³⁴ Results from a recent survey led Gartner to conclude that more storage hardware is being purchased but storage capacity is not being efficiently managed. A common storage strategy for electronic information has been to purchase more storage capacity as an agency's servers ran out of space, and to keep all records because the hardware was relatively inexpensive.

Although the cost of disk storage hardware is expected to drop by 30% annually,³⁵ overall storage costs now consume more than 50% of many enterprises' IT capital spending.³⁶ Gartner data indicates that on average, enterprises will spend three times more on organization and staffing than on storage hardware. Labor costs for storage management are often shared across multiple information management units; thus, the total cost of storage management can remain hidden. Industry analysts are advising organizations to control expenditures by changing their storage management strategies and processes. Consistent application of records management rules can provide better control of the volume of data.

The lack of a comprehensive electronic archive and the fragile nature of digital media make the long-term retention of electronic records difficult. Government records must be maintained in a tamper-free environment so that they can be authenticated. Electronic government records must be able to survive changes in storage, computer hardware and software technology, and ever-changing formats. For records with retention periods of 10 years or longer, agencies will need to develop migration strategies that include budgets for hardware and software upgrades, migration cycle times,

and personnel costs. This cost will not be trivial, but the loss of historical information to the state would be incalculable.

Because of the enormous number and increasing size of electronic messages and the unique requirements for managing digital media, e-mail records are not being managed according to the law in spite of all good intentions. In an attempt to gain control over the flood of state e-mail, the Records Management Interagency Coordinating Council (RMICC) has been studying cost-effective ways to manage electronic information.

In 2002, RMICC engaged the "Problems in the Permanent Retention of Electronic Records" class at the University of Texas at Austin to develop a model for the long-term preservation and access of e-mail records produced by state agencies. The class project, *Coming to TERM: Designing the Texas Email Repository Model*,³⁷ makes five recommendations and proposes a model upon which a digital archive could be developed. The recommendations include:

- Complying with the current e-mail guidelines promulgated by the Texas State Library and Archives Commission to establish a common reference for all agencies.
- Creating an automated e-mail classification system that uses metadata created by e-mail messaging systems.
- Adopting the Open Archival Information System framework as a guide to developing a long-term, trusted preservation repository for e-mail and other digital objects.
- Developing a prototype repository with features that can be phased in over time.
- Using the facilities at the West Texas Disaster Recovery and Operations Center with management and oversight of the archive by a representative management board and the administration and operations outsourced to a trusted vendor.

An automated classification system would reduce most of the manual effort that goes into preparing e-mail for long-term

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retention. Further, a well-managed central repository would remove most of the long-term storage costs that agencies now bear. Agencies would retain control of their e-mail, including its privacy and security, while avoiding administrative and other personnel and infrastructure costs. Although there might not be a large decrease in costs the state would realize significant benefits in e-mail management, access, avoidance of legal liabilities, and preservation of historically valuable documents.

Recommendations for Issue 7

It is recommended that the Legislature:

1. Direct DIR to investigate the feasibility, costs, and benefits of selecting a single, standard e-mail product for use by all state agencies.
2. Authorize and fund DIR to establish a centralized, trusted, digital repository for e-mail archives that will follow state standards for maintenance, retrieval, and disposal of electronic records as proposed in *Coming to TERM: Designing the Texas Email Repository Model*. After establishing the repository, subscription fees can be raised to support the repository as needed.



TRENDS

The Department of Information Resources tracks the development of key IR technologies and trends. DIR's Agency Strategic Plan³⁸ lists trends that are anticipated to have the most impact on state government during the next five years. That list was used as the basis for selecting trends to highlight in this report. Additional trends were gathered from secondary industry sources and from IRMs at other state agencies.

Agency IRMs and DIR analysts then ranked the trends in order of importance to their agencies and to the state. This section identifies four of the most significant trends, numbered for reference, that may have a substantial impact on Texas state government in the near future:

- *Trend 1* – Governance
- *Trend 2* – Asset Management
- *Trend 3* – Wireless and Mobile Computing
- *Trend 4* – eXtensible Markup Language

In addition, this section touches briefly on five emerging trends that have potential to be useful tools for managing information resources. Undoubtedly these will not be the only technologies to impact or change state government. What is of utmost importance is that the state be positioned to take advantage of technology trends that enable agencies to provide more efficient and responsive service to citizens.

TREND 1 – GOVERNANCE

Executive-level committees (e.g., IT steering committees) focused on IT value, resources, and initiatives enable organizations to be more adaptive and innovative, especially during rapidly changing business conditions.

— META Group³⁹

Governance refers to the set of rules used to manage interaction among organizations. As government adopts a strategic-services model, agencies and departments must

break down the old rules of engagement and develop new techniques to cooperate and leverage resources. Typically, a governance board handles cross-jurisdictional issues. The board is composed of leaders from multiple organizations and the jurisdiction's Chief Information Officer (CIO). The board reports to the senior government official (e.g., mayor or governor) and has the authority to set IR policy.

With IR steadily becoming one of the largest line items in many public and private sector budgets, executives struggle to understand the costs, risks, values, issues, and opportunities surrounding technology initiatives, resources, and expenditures. As CIOs become part of the executive team that includes Chief Executive Officers, Chief Financial Officers, and Chief Operations Officers, they are utilizing IR steering committees to formalize technological governance, education, and process.

According to META Group, during 2002, fragmented program/project management initiatives within individual government agencies will expand to enterprise-level initiatives (e.g., across the entire jurisdiction).⁴⁰ META predicts that such organizations will grow in number and be increasingly utilized to manage cultural differences among organizations. Texas is at the forefront of this trend with groups like the County Information Resources Agency and the Telecommunications Planning and Oversight Council.

Organizational Impact

Cross-jurisdictional governance models require CIOs to more closely interface with public policymakers to create governance and implementation strategies.

By regularly working together on strategic initiatives, steering committees expend minimal energy relearning about members and maximum energy on significant issues.

To deal with greater ambiguity, shorter deadlines, and increased complexity, the inner workings of governance

organizations (e.g., governance, policy, processes) should be visible, transparent, and well understood.

TREND 2 – ASSET MANAGEMENT

Although IT asset management tools have been around for years, IT asset management as a cost-saving discipline has not been widely embraced until now.
— Gartner Group⁴¹

Asset management tools help IR departments accurately inventory their hardware and software assets and track those assets through their life cycles. Asset management usually includes three components: physical, financial, and contractual.

The physical component typically includes inventory management, version control, software distribution, license tracking, usage monitoring, end-user and support staff training, and asset retirement information. The financial component covers procurement, budget, cost control, reallocation of available assets, and charge back. The contractual component covers areas such as license compliance, contract maintenance, supplier management, negotiations, and the preparation and review of requests for proposals. Few organizations in either the public or private sectors have a method to discover, track, and quantify the strategic information necessary to effectively manage these components.

There is a lack of statistical data available on the state's information resources infrastructure that would allow asset management decisions to be made strategically at the statewide level. Currently, the State of Texas only requires state entities to audit desktop application software for license compliance and usage on a biennial basis. Even this limited audit resulted in savings of \$648,404 in 2001–2002 by eliminating costs associated with unused software. However, not all agencies conducted a full audit, but rather performed inventories that simply validated the existence of

an asset, not its need or usage. Agencies that performed management and control audits reported better usage of their assets.

The mainframe environment, where the state has much more invested than in desktops, has been virtually unreported and unaudited. According to industry analysts, the largest cost savings can be found in this area. For instance, maintenance contracts for mainframes and their application software often fall automatically into renewals without reviews. Yet during the Year 2000 project, many agencies and universities eliminated software that was no longer in use on mainframes. Industry analysts suggest that audits be required on mainframe software, hardware configurations, storage, and general utilization on a regular basis. Industry best practices also recommend that formal renegotiation processes occur at interim periods, not just at the conclusion of contract periods.

Further, agencies not only need to know what assets they own, where they are located, and who is using them, but also how they are moving and changing over time. Having a snapshot view of the data without the trends or historical information cannot support IR planning, reporting, and management. Thus, asset management is most effective when it is an ongoing discipline in an organization in much the same way accounting is.

Organizational Impact

After many years of neglect, asset management is coming into its own as a way to control IR costs. The primary motivation for asset management is saving money. Gartner estimates that enterprises that begin an asset management program experience a 10% to 30% reduction in costs during the first year. Organizations continue to experience savings of 5% to 10% annually over the following five years.⁴²

A secondary and increasingly powerful motivation to employ asset management is to maintain compliance with software license agreements. An active asset management program helps organizations avoid risks of legal liability for copyright infringement.

Asset management programs result in savings by:

- Providing agencies the information needed to standardize infrastructure, desktops, and applications.
- Reducing mainframe storage needs by removing unused software applications and retired/unused data.
- Salvaging equipment by knowing what can be salvaged or used in other state agencies.
- Improving budgeting (reducing purchasing spikes, planning for infrastructure migration).
- Managing contracts more effectively by controlling automatic extensions of leases or maintenance fees, especially on mainframes, and negotiating performance measures that reflect timely and accurate service improvement through automation.

TREND 3 – WIRELESS AND MOBILE COMPUTING

The key to understanding the mobile and wireless space: Mobility doesn't always equal wireless, and wireless doesn't always equal mobility.
—*Network Computing*⁴³

Wireless communication is simply communicating data without the use of cabling or traditional telephone landlines. This may involve cellular telephone, two-way radio, fixed wireless, laser, or satellite communications.

The use of wireless technology in the day-to-day transfer of information is increasing rapidly, and new developments are continually expanding its role in modern communication. Even so, the majority of wireless technologies do not yet provide data transfer speed (bandwidth), accessibility, or security equal to landlines. This is especially true for cell phones and two-way radio. Furthermore, the transmission range for wireless technologies usually is inversely related to

the data transmission speed. That is, the further the wireless signal has to travel, the less data it can carry per second.

Mobile simply describes a computing device that is not restricted to a desktop. A mobile device may be a Personal Digital Assistant (PDA), a “smart” cell phone or Web phone, or a laptop computer.

Mobile wireless devices are usually connected to a central database. This type of application can provide access to very large data collections and also provide the user with the very latest up-to-date information. But the best choice for connectivity is not always wireless. The following examples illustrate different scenarios for both wireless and landline connectivity for mobile devices:

- A regulatory agency equips its inspectors with laptop computers to record data from each business inspected. At the end of the day, inspectors use their laptop computers to call the agency's central computer over a landline and send results from the day's inspections to the home office. Inspectors do not have to return to the office to file reports. This allows them to make many more inspections per week.
- A mobile health clinic uses a van to provide medical services to remote rural areas. The health workers occasionally need rapid access to large volumes of data, so the van is equipped with computers and an antenna for satellite communications. The expense of satellite networking is justified by the potential life-and-death benefits of having quick access to medical records and sources of treatment information.
- During the crisis of September 11, 2001, in New York City, the congestion of landline and cell phones made it quite difficult to communicate. Devices such as the BlackBerry™ PDA were a key means of communicating emergency messages quickly and reliably. Based on this experience, the U.S. House of Representatives adopted the BlackBerry as its messaging device for emergency communications. Not only is it a simple and inexpensive solution, it has now become a key tool with which legislators routinely communicate with their staffers.⁴⁴ However, it should be

noted, the BlackBerry worked so effectively because there were relatively few devices at the time. As the wireless network becomes more congested, its performance may suffer in similar congested situations.

- A health and human services agency could receive new regulations from the federal government and create an online video to train employees. Employees on the road could go to businesses such as copy shops that offer high-speed Internet connections and download the training.

Organizational Impact

Mobile devices and wireless connectivity offer organizations some attractive benefits. The primary advantage to mobile devices is that they allow employees to carry part of the office with them. The devices can be used to reengineer business processes, decrease the use of paper forms, eliminate redundant processes, increase accuracy of data collection, and speed up client and customer service.

Carefully designed applications with clear goals and measurable benefits are the best candidates for mobile and wireless devices. However, there are serious drawbacks as well.

- Security for wireless computing can be a particularly challenging problem. Data communication through cell phones must include proper data encryption to be secure. To be effective, security must be automatic and transparent.
- Support requirements are usually higher for mobile workers. Mobile devices are more likely to be damaged by everyday handling, they are lost or stolen more often, and mobile devices seem complex simply because they are newer and not as well understood as desktop computers. Standardization of mobile devices within organizations is the primary strategy for reducing support requirements. Organizations must be proactive about setting standards for the kinds of devices that will be used and developing policies for supporting them.

- Web applications must be redesigned for each type of physical wireless device. Thus organizations can incur considerable additional expense when redesigning Web sites to accommodate the limitations of handheld devices.

TREND 4 – EXTENSIBLE MARKUP LANGUAGE

We have at our fingertips
technology that will greatly improve
communication among jurisdictions and all Americans,
but we will be unable to utilize it until a comprehensive
strategy for its implementation is developed.

— Sen. Joseph Lieberman⁴⁵
Chairman of the Senate Committee
on Governmental Affairs

XML, eXtensible Markup Language, is a flexible, nonproprietary set of standards for annotating or “tagging” information. XML-tagged data can be transmitted over a network, such as the Internet, and be readily interpreted by other computer systems that understand XML tags. XML is touted as the solution for making computerized data more accessible and usable than has been possible in the past.

As a result, private and public organizations are creating applications that take advantage of XML’s features. For example, it may be possible for law enforcement agencies to identify and retrieve information about criminal suspects from any number of federal, state, and local databases more easily and efficiently.

Organizational Impact

Much effort has been expended over many years to develop the Electronic Data Interchange (EDI) standards. EDI standards will be used alongside and even within XML; however, XML is likely to be used more broadly because it can be customized more easily and is easily read as text files. XML will also play a key role in managing Web content and managing the presentation of information on new wireless devices.

There are a number of risks in the technology. One drawback is that markup languages, data definitions, and data structures may multiply. If organizations develop their systems using unique, nonstandard XML data definitions and structures, the systems will be unable to share data directly with other systems. Data exchange will require additional programs to translate data structures from one organization and system to another. Such an approach defeats XML's major benefit, ease of data exchange.

Software vendors and system developers may also be tempted to add proprietary functions to the XML standards. Systems that use such extensions might be less able to exchange information easily with other XML-enabled systems. In addition, implementing XML could create new security vulnerabilities if systems are not designed to address this risk.

It will be important for the public sector to leverage and build upon commercial standards and XML vocabularies as they become more mature and widely used. Governments should also strive to provide input to these standards while they are still under development. This will ensure that important government-specific requirements are not overlooked.

Industry analysts stress that agencies should address XML implementation through enterprise architectures. This approach reduces the likelihood of costly systems reengineering in the future. A government-wide strategy for XML adoption will help guide agency implementation efforts and reduce the development of nonstandard XML definitions.

Systems developers would benefit from a registry of government-unique XML data structures such as data element tags and associated data definitions. Developers can consult such a registry when building or modifying XML-based systems for government entities. In order to establish such a registry, policies and procedures for adding tag definitions and maintaining the registry system will also be needed.

EMERGING TRENDS

Emerging trends are developments in IR technologies or management strategies that may have important implications for the state beyond the current biennium.

- *Open Source Software* – Open source software is modifiable and may be redistributed without cost. Access to source code and license agreements allowing the initial distribution of software and redistribution of modified software are the most critical attributes of this initiative. It includes operating system software, Web system software, system utilities, office automation tools such as office suites and e-mail, and specialized applications such as accounting. Due to the extensive growth over the past few years of Linux, an open source operating system, the expression “open source” has become familiar within the public and private sectors.

There is a significant potential for open source software to create cost savings for government entities. For instance, according to analysts at IDC, Linux has already become the mainstream choice in many industries today.⁴⁶ It is expected that Linux will enter the mainstream in most markets by 2005.

- *Biometric Authentication* – Because agencies work with constituents' information, they must ensure the data is kept from unauthorized eyes. Traditionally agencies use password protection as the primary form of security for their data. Authentication via password protection had been widely adopted because password protection is inexpensive and easy to install and maintain. However, there are problems with such systems. Most systems allow administrators to set rules requiring sophisticated passwords, but users often resist this restriction. Users tend to select passwords that are easy to remember, thus making them easier for hackers to determine.

Biometric products are becoming more popular because they can be more reliable and user friendly and are considered to be more secure than other products that use password protection. Biometric technology authenticates users through fingerprint scanning, palm scanning, facial

recognition, iris and retinal scanning, and signature verification, as well as hand and finger geometry. Biometric authentication is thought to be more advanced than passwords or personal identification numbers because a biometric trait cannot be lost, stolen, altered, or recreated.

Following the events of September 11, 2001, there is a heightened interest in biometrics within the private sector and among federal, state, and local governments. Biometric security technology is being incorporated into applications for improving airport security, preventing business theft, strengthening national borders, verifying travel documents and visas, and preventing identity theft.

According to Faulkner Information Services, the market for biometric security technologies generated \$525 million in revenue in 2001 and is expected to reach \$2 billion by 2006. Statistics for 2001 show North America accounted for 75% of biometric technology sales.⁴⁷

- *Smart Cards* – A smart card is a plastic mechanism similar to a credit card that uses an embedded computer chip to store and process information about its owner. For instance, a smart card could contain a person's medical history, security clearance, or banking records. A smart card can facilitate the exchange of data between multiple applications. A smart card preserves the integrity of user data and also protects the confidentiality of the data. Only those who have authorization can view files on another person's card.⁴⁸

Government bodies are capitalizing on smart card technology to keep critical information secure and to conveniently share information among multiple federal agencies. A good example is the Lone Star Card—its implementation significantly reduced fraudulent use of welfare payments.

Although the U.S. has been slow to adopt smart cards, they are being used in all areas of high technology, including commerce applications and telecommunications. Europe has widely used smart cards for years. Faulkner predicts a 30% increase in use of smart cards by 2005.⁴⁹

- *Capability Maturity Model Integration* – Capability Maturity Model Integration (CMMI) is a methodology with which an organization can assess and improve the effectiveness of its work processes. The methodology ranks processes in stages, or levels, from one to five depending on how well documented, controlled, and repeatable the process is. CMMI can also help establish priorities for improving processes and guiding the implementation of those improvements.⁵⁰

CMMI has become the industry's premier framework for software process improvements. According to *Government Computer News*, the Software Engineering Institute's most recent profile, issued in March 2002, noted that 31% of the 1,638 organizations using CMMI were government agencies.⁵¹

Many organizations are adopting the CMMI model in an effort to improve management, control, and budgeting of IR projects. IR vendors are using the model to improve quality and profit margins, and to gain credibility with their customers. For instance, the Department of Defense requires its contractors to maintain CMMI level three compliance.

One of the goals of a pilot CMMI project launched by the Texas Department of Human Services (DHS) is to establish a permanent process improvement program to increase IR's ability to deliver quality application systems. The DHS pilot project is planned to reach CMMI level three in two to three years. As a result of the pilot, DHS adopted CMMI agency-wide to improve management of all projects.

After evaluating the DHS pilot project and another at the Office of the Comptroller, the State Auditor's Office reported that "[t]he state can expect significant savings from using a standard framework such as the Capability Maturity Model for Software for managing and improving software development processes."⁵²

- *Voice over Internet Protocol* – Consumers can now dial up friends anywhere in the world over the Internet and not pay long distance charges using Voice over Internet Protocol (VoIP) technologies. However, using the service

over the Internet is unpredictable and the quality of the call is usually mediocre at best. Business and government organizations require much more predictable, higher quality service. VoIP for state business must be implemented on TEX-AN, the state's consolidated telecommunications network, until reliable quality of service is available across the Internet.

The convergence of voice and data will save money for state agencies in the long run. Savings will be based on agencies' long-distance call patterns. Most calls are from field offices to the Austin headquarters or the reverse.

The Comptroller's Office and DIR are piloting a VoIP installation. They will expand the current projects so calls from all agencies in the Capitol Complex can be completed to the Austin metropolitan area. DIR is developing an integration plan for agencies that wish to install their own VoIP equipment. In the future, VoIP calls will be transferred from one agency to another through the Capitol Complex switch. Call patterns from the Austin Capitol Complex switch to Houston, Dallas, and San Antonio will also be analyzed to determine if VoIP will reduce long distance charges for calls to those metropolitan areas.

Technology professionals are concerned with the current quality of voice calls on the data network, the stability of VoIP solutions, and the consequences of being prematurely locked in to a proprietary architecture. There is also a general lack of expertise and experience with VoIP technology. These concerns will be alleviated over time as the technology matures. But the lack of expertise now prevents many organizations from taking even the most tentative first steps into converged networking.



APPENDIX A

WORKING GROUPS

ADVISORY COUNCIL ON THE DIGITAL ECONOMY

Initiative – The Advisory Council on the Digital Economy was created in 1999 by the lieutenant governor to provide strategic policy initiatives for the state’s high-tech industry.

Scope of Work – The Council was charged with finding ways to:

- Maintain Texas’ leadership in the digital economy,
- Enhance Texas’ position as a leader in the digital economy by finding strategies to develop a more educated workforce,
- Promote the broad opportunities that the Internet brings,
- Help the lieutenant governor make recommendations to the Legislature.

Participants – The Council was composed of four state senators and 21 individuals from the private sector.

Major Accomplishments – The Council released its report, *Bringing Digital Opportunity to all Texans*, on October 9, 2000. Many of the recommendations made in the report were initiated as legislation by the 77th Legislature and virtually all of the Council’s recommendations were adopted in some form.

Contact – Brooke Rollins, Director of Policy, Office of the Governor, P.O. Box 12428, Austin, TX 78711, 512-463-5856, broollins@governor.state.tx.us, www.senate.state.tx.us/75r/senate/commit/archive/digital/digital.htm

COUNTY INFORMATION RESOURCES AGENCY

Initiative – The County Information Resources Agency (CIRA) is an interlocal government agency created under the authority of Government Code, Chapter 791 to assist member entities with their technology needs. At this time, it is supported almost entirely by contributions from the Texas Association of Counties.

Scope of Work – The purpose of CIRA is to provide central, cooperative, and coordinated assistance and services to its members in all matters relating to information resources and technologies.

CIRA assists counties with finding bandwidth solutions, installing networks, purchasing computers, coordinating with state agencies, and developing data integration solutions. In addition, CIRA provides members with technology news and information, Web pages, e-mail and Web page services.

Participants – Any Texas county or regional council of government is eligible for membership in the County Information Resources Agency. Potential eligible entities include cities, special districts, and other local government entities. The current membership list can be found at www.cira.state.tx.us/memblist.html.

Major Accomplishments –

- Assisted in the development of several technology-related state agency plans and reports, including the *Texas Justice Information Integration Initiative Plan* and the Telecommunications Planning and Oversight Council’s strategic plan.
- Worked with multiple state agencies to plan for the coordinated use and deployment of multi-jurisdictional information and information systems.
- Established a pilot consisting of several counties and a council of governments to develop technology and connectivity solutions.

Contact – Stan Reid, CIRA Director, 1204 San Antonio, Austin, TX 78701, 512-478-8753, StanR@county.org, www.cira.state.tx.us.

EDUCATIONAL TECHNOLOGY COORDINATING COUNCIL

Initiative – The Educational Technology Coordinating Council (ETCC) was extended in Rider 70 in the Texas Education Agency’s appropriation by the 77th Legislature. The rider is based on a Legislative Budget Board staff report that addresses the use of technology funds for educational and instructional purposes.

Participants – Texas Education Agency, Department of Information Resources (elected chair of council), Texas Building and Procurement Commission, State Board for Educator Certification, Telecommunications Infrastructure Fund Board, Texas State Library and Archives Commission, Higher Education Coordinating Board, and Colleges of Education (State Universities) are required to participate in the ETCC.

Scope of Work – The ETCC was established to represent the interests of the state, state agencies, and institutions of higher education to ensure the cooperation and coordination of the state’s efforts to implement educational technology initiatives.

Major Accomplishments – The ETCC completed the Statewide Master Plan for Educational Technology in November 2000. The plan will be the basis for all state agencies’ technology plans in regards to:

- Educational technology initiatives
- Pre-service and in-service training in use of technology for curricula development and education.

The master plan also addresses some issues to facilitate implementation.

Contact – Debbie Opdahl, Assistant Director of Telecommunications Planning, Department of Information Resources, P.O. 13564, Austin, Texas 78711, 512-936-4499, debbie.opdahl@dir.state.tx.us, <www.etcc.state.tx.us>.

EPROCUREMENT ADVISORY COMMITTEE

Initiative – The 77th Legislature required DIR to establish and manage the electronic infrastructure of an eProcurement marketplace and electronic commerce network.

Participants – The eProcurement Advisory Committee comprises representatives from the Board of Nurse Examiners, Comptroller of Public Accounts, Department of Information Resources, Health and Human Services Commission, Office of the State Auditor, Texas Department of Criminal Justice, Texas Department of Transportation, Texas Incentive and Productivity Commission, Texas Commission on Environmental Quality, Texas State Library and Archives Commission, Texas Workforce Commission, and the University of Texas.

Scope of Work – The current phase of the project includes the following:

- Assist in preliminary planning, needs assessment, and development of strategy;
- Analyze the requirements for an online travel reservation and ticketing system and assess the feasibility of including travel functionality in the eProcurement system;
- Research and analyze alternative eProcurement solutions;
- Develop Requests for Offer to support the acquisition and implementation of an eProcurement solution;
- Assist in vendor evaluation, selection, and contract negotiation;
- Develop a cost recovery model for the proposed eProcurement solution; and
- Develop a fit/gap analysis for the selected eProcurement system.

Major Accomplishments – The eProcurement team has documented the current Texas procurement environment including procurement rules and regulations, procurement process flows, legacy financial and ERP systems, and purchasing statistical data.

Surveys were developed for state agencies to gather information related to their purchasing processes, back office financial systems, information on other electronic purchasing programs, and metrics on expenditures. Surveys

to State of Texas vendors were also developed to gather input on their eProcurement experience, technical capabilities, and feedback on the proposed cost-recovery model.

Contact – Robin Fenner, Project Manager, Department of Information Resources, P.O. Box 13564, Austin, TX 78711, robin.fenner@dir.state.tx.us, <www.dir.state.tx.us/pmo/eprocurement>.

HEALTH AND HUMAN SERVICES RECORDS MANAGEMENT WORKGROUP

Initiative – The Health and Human Services (HHS) Records Management Workgroup was originally created by the HHS Steering Committee to research and report on technologies that would benefit records management. The workgroup was later charged to identify best practices and preferred models in records management.

Participants – The workgroup is composed of the records management officers (or their representatives) from HHS member agencies.

Scope of Work – The workgroup is identifying candidates for best practices that would benefit the member agencies' records management programs.

Major Accomplishments – Under the original charge, the workgroup produced a report documenting available imaging technology and the pros and cons of its use. The workgroup recently completed a detailed Invitation for Bids for inclusion in the Texas Building and Procurement Commission's statewide records storage contract. The workgroup is currently developing draft records management policies and procedures that are common to all HHS agencies for publication by the HHS Commission.

Contact – John Rehm, Texas Rehabilitation Commission, 4900 N. Lamar Blvd., Austin, TX 78751, 512-424-4341, john.rehm@rehab.state.tx.us.

INTERAGENCY TASK FORCE ON ELECTRONIC BENEFITS TRANSFER

Initiative – The Interagency Task Force on Electronic Benefits Transfer (EBT) was established in 1995, and expanded during the 1997 legislative session. Its mission is to advise and assist state agencies in managing and adding new benefit programs to the statewide EBT system and to serve as the EBT oversight body with responsibility for the direction and coordination of EBT initiatives.

Participants – The task force comprises representatives from the Office of the Comptroller, Office of the Attorney General, Health and Human Services Commission, Texas Department of Health, Texas Department of Human Services, Texas Workforce Commission, Texas Rehabilitation Commission, and representatives from retailers who maintain EBT point-of-sale equipment, banks or owners of ATMs, and consumer advocacy organizations.

Scope of Work – The task force oversight responsibilities include:

- Assuring that the existing platform and card usage is maximized.
- Securing volume discounts on contract fees for multiple agencies.
- Reviewing each agency to determine the feasibility of using EBT or direct deposit.
- Providing technical expertise and guidance on communication issues and interoperability between state programs as well as with other states.
- Developing operating standards and guidelines and a long-term strategy for state agencies in the use of EBT in government payments.
- Working with state agencies to determine the impact of Regulation E, where certain programs may be subject to liabilities.

Major Accomplishments – The group's major accomplishments are the coordination of EBT technology among state agencies and distribution of information to agencies concerning the application of EBT technology.

Contact – Cindy Alexander, EBT Liaison, Texas Comptroller of Public Accounts, 111 East 17th, Room 309, Austin, TX 78774, 512-475-0129, cindy.alexander@cpa.state.tx.us.

NATIONAL DATA INTERCHANGE STANDARDS TASK FORCE

Initiative – The National Data Interchange Standards Task Force was created by the 76th Legislature to provide a coordinated strategy for state compliance with the Health Insurance Portability and Accountability Act (HIPAA).

Participants – The representative of the Health and Human Services Commission is designated as the presiding officer. The administrative head of each of the following agencies is required to participate on the task force: Comptroller of Public Accounts, Employees’ Retirement System of Texas, Texas Department of Health, Texas Health Care Information Council, Health and Human Services Commission, Texas Department of Human Services, Texas Higher Education Coordinating Board, Department of Information Resources, Texas Department of Insurance, Texas Department of Mental Health and Mental Retardation, Teacher Retirement System of Texas, State Office of Risk Management, and Texas Workers’ Compensation Commission.

Scope of Work – The task force was established to develop a coordinated strategy for the state’s implementation of the national data interchange standards adopted under the HIPAA and its subsequent amendments. As part of developing the state’s strategy, the task force analyzes the standards, the legal requirements related to the standards, and the state’s health care payment or information systems in existence or under development. The task force periodically reports on the results and conclusions of its analysis and recommends needed legislation. The task force will be abolished September 1, 2005.

Major Accomplishments – The task force was first convened in January 2000. In order to gain a perspective on the status and costs to the agencies, the task force has developed a survey requesting information from the impacted agencies on the number of databases, applications, and time required to complete the process.

Contact – Cathy Lorenzen, Health and Human Services Commission, 2555 Riata Vista Circle, Austin, TX 78727, 512-338-6517, cathy.lorenzen@hhsc.state.tx.us

OPEN RECORDS STEERING COMMITTEE

Initiative – The Open Records Steering Committee advises the Texas Building and Procurement Commission (TBPC) on the procedures and charges for public information and on the information state agencies make available to the public over the Internet.

Scope of Work – The committee advises TBPC on the performance of its duties under the Public Information Act, studies procedures and costs for responding to public information requests, and studies what type of information would be cost effective for state agencies or beneficial to the public to have posted on the Internet.

Participants – The committee is composed of representatives from the Attorney General’s Office, Comptroller’s Office, Department of Public Safety, Department of Information Resources, Texas State Library and Archives Commission, and TBPC, along with five public members and a representative from a municipality, a county, and a school district.

Major Accomplishments – The committee surveyed state agencies, cities, counties, and school districts in the fall of 2001 to collect data about procedures, costs, and availability of information on agency Web sites. The steering committee published its Report on Charges for Public Information in March 2002. This biennial report highlights the disparities among agency definitions and handling of public information requests.

The Open Records Steering Committee members developed definitions for categories of reportable requests and redesigned the online reporting form used by agencies to submit monthly reports on open records requests.

Contact – Hadassah Schloss, Open Records Administrator, Texas Building and Procurement Commission, P.O. Box 13047, Austin, TX 78711, 475-2497, hadassah.schloss@tbpc.state.tx.us, www.tbpc.state.tx.us.

PUBLIC ELECTRONIC SERVICES ON-THE-INTERNET WORKING GROUP

Initiative – The Public Electronic Services On-the-Internet (PESO) Working Group was established in 1999 to provide a forum for addressing policy and technology issues related to improving access to government information and services via the Internet.

Scope of Work – PESO addresses issues related to improving citizen access to government information and services via the Internet and addresses any area of Internet access, Web site design, or management that is of concern to its membership.

Participants – Membership is open to all state entities, agencies, and universities.

Major Accomplishments –

- Assisted in the revision of state Web rules and standards on the:
 - Accessibility for persons with disabilities to information, services, and resources.
 - Privacy and security of information collected by agencies via the Web and for online transactions and the associated risks.
 - Indexing and linking of information resources available to the public.
 - Common navigation to state and agency resources.
- Established an eXtensible Markup Language working group that is developing guidelines for state agencies. The group is developing a set of core data element standards to ensure interoperability of data exchanges between agencies and the public.
- Established an Open Source & Environments working group that is developing guidelines and online resources for the development of applications that could be shared among governmental entities.

Contact – Jerry Johnson, Department of Information Resources, P.O. Box 13564, Austin, TX 78711, 512-475-4756, jerry.johnson@dir.state.tx.us, <www.dir.state.tx.us/peso>.

RECORDS MANAGEMENT INTERAGENCY COORDINATING COUNCIL

Initiative – The Records Management Interagency Coordinating Council (RMICC) is an advisory council with rule-making authority. It was created by the Legislature in 1995 to study records management issues affecting the state and to adopt policies to improve the state's management of records.

Scope of Work – RMICC reviews actions of its member agencies that impact the state's management of records, studies other records management issues, and reports results of its research along with any recommended legislation to the Governor and the Legislature no later than November 1 of each even-numbered year.

Participants – RMICC is composed of representatives from the Secretary of State's Office, Comptroller's Office, Attorney General's Office, Texas State Library and Archives Commission, Texas Building and Procurement Commission, Department of Information Resources, and State Auditor's Office.

Major Accomplishments – RMICC developed a statewide subject matter index for organizing state information and worked with TBPC and telephone companies to re-organize the Blue Pages in order to comply with the subject categories. Most recently, RMICC created an e-mail policy model to help state agencies manage their e-mail records more effectively.

Contact – Regina Miles, Clerk, Texas State Library and Archives Commission, P.O. Box 12927, Austin, TX 78711, 512-463-5460, regina.miles@tsl.state.tx.us, <www.tsl.state.tx.us/slrms/state/rmicc.html>.

STATE AGENCY JUSTICE INFORMATION COORDINATING COMMITTEE

Initiative – This group was formed through the initiative of the participating agencies in an attempt to improve interagency coordination of justice information sharing. No

statutory mandate exists, but each state agency director has signed an action plan for the effort.

Participants – Participating agencies are the Texas Department of Public Safety, Texas Department of Criminal Justice, Office of Court Administration, Texas Juvenile Probation Department, Texas Youth Commission, and the Office of the Attorney General. Advisory agencies are the Texas Criminal Justice Policy Council, Department of Information Resources, State Auditor’s Office, Criminal Justice Division of the Governor’s Office, and the Legislative Budget Board. The Texas Association of Counties participates as an ad hoc member.

Scope of Work – The focus of the council is to coordinate the sharing of justice data among state agencies.

Major Accomplishments – The committee has compared data elements across agency systems and identified a common set of data elements for use in future data sharing. Those elements have been mapped to the national eXtensible Markup Language justice data dictionary and form the basis for a state justice data dictionary. The national justice data set has been brought forward to contribute to a general statewide XML data dictionary. Participating member agencies are cooperating on common projects, emphasizing coordinated interaction with local contributors.

Contact – David Gavin, Asst. Chief, Administration, Texas Department of Public Safety, P.O. Box 4143, Austin, TX 78765, 512-424-2077, david.gavin@txdps.state.tx.us.

TELECOMMUNICATIONS INFRASTRUCTURE FUND BOARD

Initiative – The Public Utility Act of 1995 was established to overhaul the telecommunications industry, provide for economic growth in the state, and create the Telecommunications Infrastructure Fund (TIF) and the TIF Board.

Participants – TIF is governed by a nine-member board of directors that meets approximately quarterly to discuss issues relevant to the agency and its constituents. TIF

collaborates with its four constituent groups: public schools, libraries, institutions of higher education, and public, not-for-profit healthcare facilities throughout Texas.

Major Accomplishments – As of June 2002, TIF has awarded more than \$1.1 billion in grant funds to more than 10,800 unique TIF-eligible entities for Internet connectivity, technology advancement, distance learning equipment, and other infrastructure equipment through both Competitive and Non-Competitive Grant initiatives. TIF not only grants funds to single constituent groups, but also encourages collaboration through Discovery and Community Network grant initiatives.

Contact – Whitney Sklar, Telecommunications Infrastructure Fund Board, 1000 Red River, Room E208, Austin, TX 78701, 512-344-4300, wsklar@tifb.state.tx.us, <www.tifb.state.tx.us>.

TELECOMMUNICATIONS PLANNING AND OVERSIGHT COUNCIL

Initiative – The Telecommunications Planning and Oversight Council (TPOC) was created by the 77th Legislature. The mission of TPOC is to develop a plan for a state telecommunications network that will effectively and efficiently meet the long-term requirements for state government voice, video, and data communications needs, with the goal of achieving a single, centralized telecommunications network for state government.

Participants – TPOC membership consists of twelve members appointed by the Governor, the House Speaker, the Lieutenant Governor, and by designation in the legislation.

Scope of Work – TPOC’s primary responsibilities are to:

1. Oversee the strategic planning and reporting functions for TEX-AN and the Capitol Complex Telephone System (CCTS), including strategic planning and reporting.
2. Review telecommunications services financial information.
3. Develop telecommunications service objectives and performance measures.

4. Review the performance of the services provided by the DIR Telecommunications Services Division (TSD) to customers of TEX-AN and CCTS.
5. Evaluate and approve or disapprove requests for waivers and extensions to waivers from using the TEX-AN and CCTS suite of services.

Major Accomplishments – TPOC published the *Strategic Plan for Texas State Government Telecommunications Services 2003-2007*, the *Status of the Plan for State Telecommunications Network Legislative Report 2002-2003*, and the *TPOC 2002 Annual Report*. The reports address policy issues and recommendations related to the implementation of a consolidated network. TPOC also sets performance measures and service level agreements for TEX-AN and has created an advisory task force to complete performance measures and service level agreements for the CCTS.

Contact – Debbie Opdahl, Department of Information Resources, P.O. Box 13564, Austin, TX 78711, 512-936-4499, debbie.opdahl@dir.state.tx.us, www.dir.state.tx.us/tpoc/.

TEXAS GEOGRAPHIC INFORMATION COUNCIL

Initiative – The Texas Geographic Information Council (TGIC) was created by the Legislature to serve as the state coordinating council for geographic information systems (GIS) mapping technology and to provide strategic planning and coordination in the acquisition and use of geospatial mapping data in Texas state government.

Participants – TGIC is an advisory council composed of executive-level representatives of 29 state agencies, ten state-supported universities and research laboratories, and five statewide and regional organizations that use geographic information systems to help accomplish their missions. DIR provides administrative support for TGIC. The Texas Water Development Board (TWDB) provides administrative support for the TGIC Technical Advisory Committee.

Scope of Work – TGIC coordinates the use of GIS technology in Texas state government. TGIC provides guidance to the

executive administrator of the TWDB on the operations of the Texas Natural Resources Information System and to the executive director of DIR for development of rules related to statewide geospatial data and technology standards.

Major Accomplishments – Last year, the council advised DIR on preparing a revised and expanded set of GIS standards, which were implemented by DIR. These standards ensure that GIS data sets developed by individual agencies can be shared and used by other agencies and the public. This year, the Council has formed a critical infrastructure mapping workgroup to coordinate the development of an accurate and current GIS database for quickly responding to natural and man-made emergencies.

Contact – Michael Ouimet, State GIS Coordinator, Department of Information Resources, P.O. Box 13564, Austin, TX 78711, 512-305-9076, michael.ouimet@dir.state.tx.us, www.tgic.state.tx.us.

TEXAS INTEGRATED ELIGIBILITY REDESIGN SYSTEM

Initiative – The Texas Integrated Eligibility Redesign System (TIERS) was created by the 76th Legislature.

Participants – The TIERS project includes experienced regional and state office employees, and representatives from vendors who supplement agency technical resources. Oversight team members include the Health and Human Services Commission, State Auditor's Office, and Legislative Budget Board. Participating in an adjunctive capacity are the Office of Attorney General, Texas Department of Health, and Texas Workforce Commission.

Scope of Work – The primary responsibility of TIERS is to replace the DHS Systems for Application, Verification, Eligibility, Referrals, and Reporting, which support over 50 Texas Works and Long Term Care programs. Secondary emphasis is placed on improving existing business processes and fraud prevention tools identified under the previous Texas Integrated Enrollment Services (TIES) Project.

TIERS will be a browser-based eligibility determination system that integrates all DHS programs, eliminating the need to re-key data and reduce the potential for errors.

Major Accomplishments –

- State of Texas Assistance and Referral System (STARS) self-screener was launched on the Internet on July 31, 2001. More than 200,000 users have inquired about services through STARS. STARS received the 2002 Texas Association of State Systems for Computing and Communications Excellence Award for the innovative use of technology.
- TIERS Scheduler was implemented in January 2002 in pilot offices in Austin and San Marcos. The Scheduler automates various administrative tasks and assists with appointments. The Scheduler feature will be incorporated into TIERS.
- Progressing with the design and development of Stage 2 (Texas Works functionality) of the application; target date for implementation is November 21, 2002.

Contact – Anne Sapp, TIERS Executive Sponsor, 512-438-4184, or William Stobie, TIERS Project Director, Texas Department of Human Services, P.O. Box 149030, Mail Code Y984, Austin, TX 78711, 512-490-0531, william.stobie@dhs.state.tx.us, <www.dhs.state.tx.us/programs/TIERS/>.

TEXAS IT ACADEMY

Initiative – The Texas IT Academy, a project spearheaded by the Comptroller’s Office, is designed to help the state recruit, train, and retain IT workers for key positions in state government while also expanding the private IT labor pool in Texas. The Texas IT Academy supplements training of IT staff through a Boot Camp training program and Continuing Education activities.

Scope of Work – The Texas IT Academy Boot Camp provides individuals with non-technical backgrounds, ranging from recent college graduates to individuals seeking a career change, the opportunity to receive state-of-the-art IT training. In turn, the state fills open IT positions with this previously untapped group of individuals.

The Texas IT Academy Continuing Education activities are designed to provide a series of training opportunities for existing agency IT staff in areas such as IT project management, IT contract management, security, and Web development.

Participants – The IT Academy is a collaborative effort between state government and the private sector. A Public-Private Advisory Committee advised on the Academy’s design and development.

Major Accomplishments – The first Boot Camp class was launched in 2000, only eight months after the meeting of the first advisory group. Additional boot camp classes and continuing education classes are being held throughout 2002 and 2003.

Contact – Billy Hamilton, Deputy Comptroller, Texas State Comptroller of Public Accounts, 111 E. 17th, Austin, TX 78744, 512-463-4002, billy.hamilton@cpa.state.tx.us, <www.texasitacademy.org>.

TEXASONLINE AUTHORITY

Initiative – The Electronic Government Task Force was created by the 76th Legislature to explore the feasibility of establishing a common system through which state and local government could use the Internet to provide various services, both internally and externally. In fiscal 2002, the task force became the TexasOnline Authority.

Scope of Work – The authority oversees the planning, development, and operations of TexasOnline, the official Web portal for the State of Texas. Other areas of oversight include future revenue recovery and the addition of other online applications. The authority will report its findings to the Legislature in September 2002.

Participants – The TexasOnline Authority is composed of governor-appointed representatives from local government, business, and industry, and the public. Seven Texas state agencies are also represented. The Texas Department of Information Resources is chair of the authority.

Major Accomplishments – The authority continues to enhance the established state portal with its primary partner, BearingPoint, Inc., by regularly adding new services that will provide greater convenience to the citizens and business of the state. The authority also established a common Internet licensing system to allow certain license holders to renew online. Approximately 30 different occupational licenses will be available online by the end of fiscal 2002.

In January of 2002, the TexasOnline and State of Texas Web sites were consolidated, making it easier to provide government services on the Internet.

Contact – Phil Barrett, Department of Information Resources, P.O. Box 13564, Austin, TX 78711, 512-475-4754, phil.barrett@dir.state.tx.us, <www.dir.state.tx.us/egov/index.html>.

WEST TEXAS DISASTER RECOVERY AND OPERATIONS CENTER

Initiative – In May 1993, the Legislature instructed the Department of Information Resources and Angelo State University to enter into a partnership to establish the West Texas Disaster Recovery and Operations Center (WTDROC) on the campus of Angelo State University.

Participants – WTDROC provides services to thirty-four agencies. The center configuration includes:

- 7 Mainframes (1235 MIPS)
- 10 Terabytes Mainframe Disk
- 111 Distributed Servers
- 16 Terabytes of Server Disk

Scope of Work – WTDROC offers opportunities to consolidate data centers in Texas, enabling economies of scale and guaranteed service levels. Further, agencies and universities are now provided an opportunity to acquire hot-site disaster recovery at a reasonable price. Services available at the WTDROC include data center operations and disaster recovery/testing services. The center is available to local governments and political subdivisions as well as state agencies and universities. In 1999, Article IX of the General Appropriations Act stated that it was “the intent of the

Legislature that all state agencies and institutions of higher education utilize the center for testing disaster recovery plans, for disaster recovery services, and for data center operations.” Further, it directed that any agency request to obtain services from any other provider be reviewed by the Legislative Budget Board to consider if the agency’s requested alternative was the best value to the state.

Major Accomplishments – Migrated the Department of Criminal Justice mainframe operations to the WTDROC, doubling the size of the center’s mainframe environment.

Contact – Patrick W. Hogan, Department of Information Resources, P.O. Box 13564, Austin, TX 78711, 512-305-8956, patrick.hogan@dir.state.tx.us, <www.dir.state.tx.us/wtdroc/index.html>.



A P P E N D I X B

I R M C O N T I N U I N G E D U C A T I O N G U I D E L I N E S

Continuing education is a critical element of successful technology management, so it is imperative that Texas IRMs stay abreast of current technology and continue to develop their knowledge areas. Mandatory continuing education guidelines for all agency and university IRMs are administered by DIR.

The guidelines were designed to be very flexible so that IRMs can customize the continuing education completed to their individual and organizational needs. IRMs choose their classes, topics, timeframes, and sources as long as the educational events meet the guidelines and can be mapped to one or more of the broad core competencies identified.

IRMs are divided into five levels depending on the size of their organization's biennial IR budget. In order to comply with the continuing education guidelines, each IRM must (1) attend a minimum number of hours of qualified training/education each fiscal year; (2) complete a one-time set of required topics within the first two years of the program; and (3) report completion of qualified training to DIR by August 31st of each fiscal year.

The following table summarizes compliance statistics for all IRMs.

Note: There are 196 agencies and universities that are required to comply with the IRM Continuing Education Guidelines. In some cases, the same person is designated IRM for multiple organizations.

IRM Level	Biennial IR Budget	Annual Requirement	Number of IRMs	# Not Complying	% Not Complying
Level 0	N/A – Legislatively Exempt	0 Hours	10	N/A	N/A
Level 1	Less than \$100,000	0 Hours	45	0	0.0%
Level 2	\$100,000 – \$249,999	12 Hours	15	1	6.7%
Level 3	\$250,000 – \$1,999,999	18 Hours	40	2	5.0%
Level 4	\$2,000,000 – \$10,000,000	24 Hours	46	5	10.9%
Level 5*	More than \$10,000,000	30 Hours	54*	5	5.6%
			200 (Total)	11 (Total)	5.5% (Avg)

*The Level 5 category includes multiple respondents from the following agencies:

- Department of Information Resources — Carolyn Purcell as the State CIO; designated IRM; and Director of Enterprise Operations Division (who oversees IRM Continuing Education Guidelines)
- The University of Texas at Brownsville – Separate IRMs for Academic and Administrative Computing
- The University of Texas Health Science Center at Houston – Separate IRMs for Academic and Administrative Computing

IRMs appointed during the year have pro-rated requirements depending on the designation date. Example: an IRM of a Level 5 agency appointed in June 2001 (4th quarter) would have zero requirements for fiscal 2002 and be in compliance with no hours reported. The IRM would simply start with 30 hours required for fiscal 2003.



A P P E N D I X C

P R O J E C T S U N D E R Q U A L I T Y A S S U R A N C E T E A M R E V I E W

The Quality Assurance Team (QAT) is mandated by the Legislature to oversee major information resources projects within Texas state agencies and universities. The QAT consists of staff from the State Auditor's Office and the Legislative Budget Board.

The General Appropriations Act defines a major IR project as an information resources technology project identified in an agency operating plan whose development costs are over \$1.0 million and includes one or more of the following:

- Requires a year or more to reach operational status
- Involves more than one agency or governmental unit
- Materially alters the work methods of agency personnel or the delivery of services to agency clients

These tables summarize all projects that have been under QAT review during the past biennium. The data was provided by the State Auditor's Office and the Legislative Budget Board. DIR categorized each project as one of the following types:

- *Administration* – Projects that involve implementing, modifying, or enhancing administrative systems that support internal business processes such as human resources, finance, and facilities management.
- *Data Warehouse* – Projects that involve the integrated storage, management, and dissemination of multiple program datasets.
- *E-Government* – Projects that involve the use of the Internet to improve the delivery of services and/or information to clients and/or the public.
- *Geographic Information* – Projects that involve geographic information systems technology as a major component.
- *IT Infrastructure* – Projects that implement or enhance the agency's information technology infrastructure, including hardware, software, local and campus networks, information resources, and maintenance.
- *Medical Information* – Projects that implement or enhance medical information systems, including patient/client records and managed health care.

- *Program Support* – Projects that directly support single program functions.
- *Records Management* – Projects that implement or enhance electronic records management, document management, or document imaging systems.
- *Telecommunications* – Projects that involve phone systems and long distance network communications.

GENERAL QAT PROJECT STATISTICS

Number of Projects	218
Number of Agencies	52
Total Cost Reported, FY2001/2002	\$2,117,224,649
Total Cost Reported, FY1999/2000	\$2,236,692,826

COSTS BY PROJECT TYPE

PROJECT TYPE	CURRENT COST
Administration	\$250,809,864
Data Warehouse	\$119,155,697
E-Government	\$86,757,389
Geographic Information	\$79,386,229
IT Infrastructure	\$380,181,596
Medical Information	\$97,933,721
Program Support	\$997,996,963
Records Management	\$23,586,899
Telecommunications	\$81,416,291

COSTS BY ARTICLE OF GOVERNMENT

ARTICLE	CURRENT COST
I. General Government	\$156,324,751
II. Health and Human Services	\$750,737,157
III. Agencies of Education	\$361,316,135
IV. The Judiciary	\$16,710,412
V. Public Safety and Criminal Justice	\$190,850,597
VI. Natural Resources	\$143,940,347
VII. Business and Economic Development	\$473,635,628
VIII. Regulatory	\$23,709,622

PROJECT COSTS BY AGENCY

AGENCY	TOTAL PROJECT COSTS	AGENCY	TOTAL PROJECT COSTS
Department of Information Resources	\$46,153,639	Texas Department of Protective and Regulatory Services	\$62,494,767
Employees Retirement System of Texas	\$11,173,977	Texas Department of Public Safety	\$110,613,184
Office of Court Administration	\$16,710,412	Texas Department of Transportation	\$397,820,273
Office of the Attorney General	\$52,286,621	Texas Education Agency	\$67,073,744
Office of the Comptroller of Public Accounts	\$32,276,100	Texas Health and Human Services Commission	\$138,789,016
Office of the Secretary of State	\$3,650,576	Texas Higher Education Coordinating Board	\$924,750
Railroad Commission of Texas	\$14,463,817	Texas Parks and Wildlife Department	\$6,491,475
Southwest Texas State University	\$7,003,000	Texas Rehabilitation Commission	\$13,683,645
State Board for Educator Certification	\$6,242,895	Texas State Board of Medical Examiners	\$924,066
Teacher Retirement System of Texas	\$20,902,298	Texas State Library and Archives Commission	\$6,215,675
Telecommunications Infrastructure Fund Board	\$1,240,000	Texas Water Development Board	\$45,149,840
Texas A&M University	\$2,404,275	Texas Workers' Compensation Commission	\$21,390,000
Texas A&M University Health Science Center	\$758,744	Texas Workforce Commission	\$73,545,176
Texas A&M University System Administration	\$1,304,324	Texas Youth Commission	\$5,161,082
Texas Agricultural Experiment Station	\$4,146,200	University of Houston System Administration	\$35,735,417
Texas Alcoholic Beverage Commission	\$4,122,450	The University of Texas at Austin	\$23,400,000
Texas Building and Procurement Commission	\$4,568,163	The University of Texas at San Antonio	\$5,184,217
Texas Commission on Alcohol and Drug Abuse	\$1,873,749	The University of Texas Health Science Center at Houston	\$17,534,761
Texas Commission on Environmental Quality	\$71,035,215	The University of Texas Health Science Center at San Antonio	\$13,786,564
Texas Commission on Law Enforcement	\$2,595,978	The University of Texas M. D. Anderson Cancer Center	\$99,562,221
Texas Department of Agriculture	\$6,800,000	The University of Texas Medical Branch at Galveston	\$26,403,244
Texas Department of Criminal Justice	\$68,357,903	The University of Texas of the Permian Basin	\$3,036,520
Texas Department of Health	\$68,892,235	The University of Texas Southwestern Medical Center at Dallas	\$17,170,360
Texas Department of Housing and Community Affairs	\$2,270,179	The University of Texas System Administration	\$6,191,101
Texas Department of Human Services	\$448,506,188	West Texas A&M University	\$1,311,500
Texas Department of Insurance	\$1,395,556		
Texas Department of Mental Health and Mental Retardation	\$16,497,557		

PROJECT DETAIL**ARTICLE 1 – GENERAL GOVERNMENT**

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
DEPARTMENT OF INFORMATION RESOURCES				
TEX-AN III	Telecommunications	\$15,956,000	7/01/1998	6/14/2002
Texas Orthoimagery Project (TOP)	Geographic	\$11,264,728	7/01/1995	8/31/2001
Capitol Complex Telecommunications System	Telecommunications	\$6,893,023	5/01/1997	11/1/2002
TEX-AN 2000	Telecommunications	\$5,802,939	7/01/1998	6/14/2002
Telemanagement Systems	Telecommunications	\$3,633,697	6/01/1997	9/30/2002
Statewide Security Assessment	IT Infrastructure	\$1,648,829	4/10/2000	1/25/2001
E-Procurement (TxG2B) Project	E-Government	\$567,500	9/01/2001	11/30/2002
Texas E-Government Framework	E-Government	\$386,923	9/01/1999	12/31/2000
EMPLOYEES RETIREMENT SYSTEM OF TEXAS				
ERS On-Line	E-Government	\$8,673,977	2/01/1999	11/1/2001
Pensions and Payroll	Administration	\$2,500,000	1/15/2002	1/15/2004
OFFICE OF THE ATTORNEY GENERAL				
Welfare Reform Automation	Program Support	\$16,280,047	1/01/1999	4/1/2002
Financial Processes Redesign Project	Administration	\$11,715,407	2/01/2000	12/31/2003
CSD Application Architecture	IT Infrastructure	\$9,353,474	3/01/2002	12/31/2002
CSD HWSW Enhancements	IT Infrastructure	\$6,553,537	9/01/2001	8/31/2003
CSD TIERS TXCSES Interfaces	Program Support	\$5,562,904	10/01/2001	8/31/2005
A&L PC Refresh Project	IT Infrastructure	\$1,668,650	9/01/2001	8/31/2003
CSD Field Resources to Increase CS	Program Support	\$1,152,602	9/01/2001	3/31/2003
OFFICE OF THE COMPTROLLER OF PUBLIC ACCOUNTS				
Data Center Operations	IT Infrastructure	\$32,276,100	8/01/1993	8/31/2007
OFFICE OF THE SECRETARY OF STATE				
Corporation System/UCC Replacement	Program Support	\$2,401,576	6/01/1997	8/31/2001
Hardware/ Software Replacement	IT Infrastructure	\$1,249,000	9/01/2001	8/31/2003
TEXAS BUILDING AND PROCUREMENT COMMISSION				
Data Warehouse	Data Warehouse	\$1,182,000	9/01/2000	8/31/2001
Construction Management System	Program Support	\$1,147,000	3/01/2001	8/31/2002
Statewide Vehicle Management System	Program Support	\$1,128,414	7/25/2000	8/31/2002
Network Infrastructure Upgrade	IT Infrastructure	\$1,110,749	9/01/1999	8/31/2002
TEXAS STATE LIBRARY AND ARCHIVES COMMISSION				
Library of Texas	E-Government	\$6,215,675	9/01/2000	8/31/2004

PROJECT DETAIL

ARTICLE II – HEALTH AND HUMAN SERVICES

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
TEXAS COMMISSION ON ALCOHOL AND DRUG ABUSE				
Behavioral Health Integrated Provider System	Program Support	\$1,873,749	9/1/1998	6/11/2001
TEXAS DEPARTMENT OF HEALTH				
Women, Infants and Children (WIC) EBT	Program Support	\$22,449,164	4/01/1996	7/31/2004
Financial - Human Resources Project	Administration	\$7,622,427	9/01/1998	9/04/2001
Workstation Replacement	IT Infrastructure	\$6,070,048	9/01/2000	8/31/2003
Health Alert Network	E-Government	\$5,778,600	8/01/1999	8/31/2003
Newborn Hearing Screening	Program Support	\$5,201,392	9/01/1999	8/31/2001
National Electronic Disease Surveillance System	Data Warehouse	\$4,339,564	9/01/2000	8/31/2004
Texas-Wide Integrated Client Encounter System (TWICES)	E-Government	\$3,653,947	4/01/1998	8/31/2003
HIV & STD LANs	IT Infrastructure	\$2,934,107	9/01/2002	8/31/2007
Women, Infants, and Children (WIC) Equipment Refresh	IT Infrastructure	\$2,256,000	9/01/2000	8/31/2003
HIV/STD RPE Systems	E-Government	\$2,032,773	9/01/2002	8/31/2007
EMS/Trauma Registry Automation (TRAC-IT)	E-Government	\$2,019,383	2/02/2001	6/30/2002
Newborn Genetic Screening System	Program Support	\$1,725,294	9/01/2000	7/01/2002
Redevelop CSHCN Eligibility & Application Systems	Program Support	\$1,497,569	9/01/2000	8/31/2003
Cancer Registration	E-Government	\$1,136,486	9/01/1998	8/31/2004
Pharmacy Inventory Control System (PICS)	Program Support	\$175,481	1/01/1999	1/31/2002
TEXAS DEPARTMENT OF HUMAN SERVICES				
Texas Integrated Eligibility Redesign System (TIERS)	Program Support	\$317,569,234	9/01/1999	8/31/2005
Data Center Services	IT Infrastructure	\$67,593,540	1/01/2001	8/31/2007
Claims Management System	Program Support	\$14,420,521	2/01/1997	8/31/1999
Web Accessible Facility Enrollment (WAFER)	Program Support	\$11,940,837	11/01/2001	8/31/2005
Long Term Care Regulatory CARES	Program Support	\$11,800,747	6/01/1997	8/31/2003
Federal Welfare Reform	Program Support	\$6,272,914	9/01/1996	4/30/2002
Web-Based Long Term Care Provider Forms	E-Government	\$4,651,750	4/15/2002	4/30/2004
Claims Management System Enhancements 2	Program Support	\$3,313,252	11/02/1999	8/31/2001
Automation Infrastructure Improvements	Data Warehouse	\$2,893,544	9/11/2000	8/31/2002
Long Term Care Quality Reporting System	E-Government	\$2,416,705	9/01/1998	8/31/2003
Generic Complaint Intake & Tracking System	Program Support	\$2,150,000	9/01/2002	8/03/2003
Revise Earned Income Disregard	Program Support	\$1,743,852	6/01/1999	8/31/2001
Integrated Administrative System	Administration	\$1,215,366	9/01/1997	8/31/2001
Post Welfare Reform	Program Support	\$523,926	6/01/2001	8/31/2002
TEXAS DEPARTMENT OF MENTAL HEALTH AND MENTAL RETARDATION				
Human Resources System (HRS)	Administration	\$7,211,787	9/01/1996	2/28/2002
Client Record System	Medical Information	\$6,738,264	9/01/1997	8/31/2003
Pharmacy Software System Replacement Project	Medical Information	\$2,547,506	9/01/2002	2/28/2004
TEXAS DEPARTMENT OF PROTECTIVE AND REGULATORY SERVICES				
DTS Lease for Computer HW/SW	IT Infrastructure	\$28,787,300	9/01/1999	1/31/2006
CAPS Web Enablement	E-Government	\$9,928,672	9/01/2001	8/31/2003
Automate Child Care Licensing	Program Support	\$9,138,478	9/01/1999	9/30/2001

PROJECT DETAIL

ARTICLE II – HEALTH AND HUMAN SERVICES, continued

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
TEXAS DEPARTMENT OF PROTECTIVE AND REGULATORY SERVICES, continued				
Maintain and Enhance CLASS	Program Support	\$6,190,044	9/01/2001	8/31/2003
Enhance CAPS Automation	Program Support	\$4,266,543	9/01/2001	8/31/2003
Enhance Automation for Child Protective Services	Program Support	\$3,142,368	9/01/1999	8/31/2001
Improve Network Efficiency & Provide Adequate Infrastructure	IT Infrastructure	\$1,041,362	9/01/2001	8/31/2003
TEXAS HEALTH AND HUMAN SERVICES COMMISSION				
Compass 21	Program Support	\$77,919,276	11/01/1997	8/31/2003
HEALTH AND HUMAN SERVICES				
Administrative System (PeopleSoft)	Administration	\$50,924,440	9/01/2000	8/31/2005
PeopleSoft Statewide License Acquisition	Administration	\$6,505,150	8/01/1999	8/31/1999
TX Information & Referral 211 Telephone System	Telecommunications	\$1,697,900	9/01/2001	8/31/2003
Childrens Health Insurance Program Programming	Program Support	\$1,066,700	9/01/1999	8/31/2001
Texas Information & Referral Internet System	E-Government	\$675,550	9/01/1999	8/31/2001
TEXAS REHABILITATION COMMISSION				
Workstations	IT Infrastructure	\$11,542,739	9/01/2000	8/31/2003
Network Management	IT Infrastructure	\$1,080,506	9/01/2000	8/31/2003
Software Development	IT Infrastructure	\$1,060,400	9/01/2000	8/31/2003

PROJECT DETAIL

ARTICLE III – EDUCATION

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
SOUTHWEST TEXAS STATE UNIVERSITY				
Enterprise Financial System	Administration	\$4,750,000	1/01/2001	8/31/2003
Establish Enterprise RDBMS	Data Warehouse	\$2,253,000	8/01/2000	8/21/2002
STATE BOARD FOR EDUCATOR CERTIFICATION				
Integrated Technology System	Data Warehouse	\$6,242,895	3/01/1995	8/31/2003
TEACHER RETIREMENT SYSTEM OF TEXAS				
Benefit Services Transformation Project (BeST)	Program Support	\$14,818,549	9/01/1994	8/31/2001
Microfiche Backfile Conversion	Records	\$4,498,749	9/01/1994	3/31/2001
Telecommunications Upgrade	Telecommunications	\$1,585,000	9/01/2001	8/31/2003
TELECOMMUNICATIONS INFRASTRUCTURE FUND BOARD				
TIFBase	Program Support	\$1,240,000	12/21/2000	5/13/2002
TEXAS A&M UNIVERSITY				
OAR and DSFA Imaging and Workflow System	Records	\$2,404,275	10/05/2000	4/30/2002
TEXAS A&M UNIVERSITY HEALTH SCIENCE CENTER				
South Texas Telehealth Partnership	Telecommunications	\$758,744	5/01/1999	9/30/2001
TEXAS A&M UNIVERSITY SYSTEM ADMINISTRATION				
Executive Information System	Data Warehouse	\$1,304,324	11/22/1999	10/31/2001
TEXAS AGRICULTURAL EXPERIMENT STATION				
E-Extension Education Access for all Texans	E-Government	\$4,146,200	9/01/2001	8/31/2005

PROJECT DETAIL

ARTICLE III – EDUCATION, continued

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
TEXAS EDUCATION AGENCY				
Texas Library Connection	Data Warehouse	\$21,765,264	9/01/1994	8/31/2003
Public Access Initiative	Data Warehouse	\$19,007,547	2/01/2000	8/31/2001
P-16 Student/ Staff Resource	Data Warehouse	\$7,000,000	9/17/2001	8/31/2003
Permanent School Fund Investment Systems Technology	Program Support	\$5,284,573	4/04/2001	8/31/2002
WTDROC Mainframe Outsourcing	IT Infrastructure	\$4,975,565	9/01/2001	8/31/2003
FSP Foundation School Payment System	Program Support	\$3,771,405	9/01/1999	8/31/2002
PEIMS Quality Enhancements	Program Support	\$1,451,000	9/01/2001	8/31/2003
Network/ Client Server Infrastructure	IT Infrastructure	\$1,431,000	9/01/2001	8/31/2003
Agency-wide Compliance Monitoring System	Data Warehouse	\$973,655	9/30/2000	8/31/2003
WTDROC Performance Enhancements	IT Infrastructure	\$950,000	9/01/2001	8/31/2003
Microcomputer HW/ SW Refresh	IT Infrastructure	\$463,735	6/01/2000	8/31/2003
TEXAS HIGHER EDUCATION COORDINATING BOARD				
Information Access Initiative	Data Warehouse	\$924,750	9/01/2001	8/31/2003
THE UNIVERSITY OF TEXAS AT AUSTIN				
Academic Computing/ Student Portal Project	E-Government	\$4,000,000	1/01/2002	8/31/2003
Academic Computing/ Network Master Plan	Telecommunications	\$4,000,000	1/01/2002	8/31/2003
Academic Computing/ Acquire Digital Library Content	Records	\$4,000,000	9/01/2002	8/31/2003
Academic Computing/ Technology Classrooms	IT Infrastructure	\$4,000,000	1/01/2002	8/31/2003
Academic Computing/ Digital Library Delivery System	Records	\$4,000,000	9/01/2002	8/31/2003
Academic Computing/ High Performance Computing	IT Infrastructure	\$2,000,000	1/01/2002	8/31/2003
Academic Computing/ Virtual K- 12	E-Government	\$1,400,000	1/01/2002	8/31/2003
THE UNIVERSITY OF TEXAS AT SAN ANTONIO				
Student Information System	Program Support	\$5,184,217	9/01/1999	8/31/2002
THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON				
Payroll, HR, Financial System Replacement PeopleSoft	Administration	\$15,766,336	9/01/1999	8/31/2003
Clinical Automation Project (CAP)	Medical Information	\$1,768,425	5/01/1999	12/31/2001
THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT SAN ANTONIO				
Replacement of Core Administrative Business Systems	Administration	\$13,786,564	9/01/1999	10/31/2003
THE UNIVERSITY OF TEXAS M. D. ANDERSON CANCER CENTER				
Ambulatory Electronic Medical Record	Medical Information	\$64,809,978	9/01/2000	9/07/2004
PeopleSoft Upgrade Project	Administration	\$21,616,380	2/01/2000	2/28/2002
Materials Management & Accounts Payable System	Administration	\$7,198,351	1/01/1998	3/31/2002
Enterprise Financial Reporting	Administration	\$3,200,000	6/01/1998	6/01/2001
Budget System	Administration	\$1,537,512	9/15/1999	2/01/2002
Anatomic Pathology	Program Support	\$1,200,000	8/04/2000	3/30/2002
THE UNIVERSITY OF TEXAS MEDICAL BRANCH AT GALVESTON				
Administrative Systems Replacement	Administration	\$20,862,750	7/01/2000	4/30/2004
Correctional Managed Health Care - Patient Records	Medical Information	\$3,975,122	8/01/1999	8/31/2001
TIF Grant - Community Based Clinics	Telecommunications	\$1,565,372	4/01/2000	8/31/2001

PROJECT DETAIL

ARTICLE III – EDUCATION, continued

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
THE UNIVERSITY OF TEXAS OF THE PERMIAN BASIN				
Mesa Building Technology Upgrades	IT Infrastructure	\$3,036,520	9/01/2001	8/31/2003
THE UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER AT DALLAS				
Clinical Repository System	Medical Information	\$10,049,272	3/01/1995	8/31/2001
UT*Smart Project - Electronic Medical Records	Medical Information	\$7,121,088	9/01/2000	8/31/2003
THE UNIVERSITY OF TEXAS SYSTEM ADMINISTRATION				
Office of Information Resources/UT TeleCampus	E-Government	\$3,411,101	9/01/1997	8/31/2004
Information Resources - CommonData Warehouse	Data Warehouse	\$2,780,000	9/01/1998	8/31/2002
UNIVERSITY OF HOUSTON SYSTEM ADMINISTRATION				
Student- Financial-HR System Replacement (PeopleSoft)	Administration	\$35,735,417	2/16/1999	8/31/2004
WEST TEXAS A&M UNIVERSITY				
WTOOnline	E-Government	\$1,311,500	9/01/1998	8/31/2003

PROJECT DETAIL

ARTICLE IV – THE JUDICIARY

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
OFFICE OF COURT ADMINISTRATION				
Appellate Court Technology	IT Infrastructure	\$7,394,032	9/01/1998	8/31/2003
Appellate Court Case Management	Program Support	\$4,495,186	9/01/1997	8/31/2003
Trial Court Case Management	Program Support	\$2,589,532	2/01/2001	8/31/2007
Trial Court Data Management	Program Support	\$2,231,662	2/01/2001	8/31/2003

PROJECT DETAIL

ARTICLE V – PUBLIC SAFETY AND CRIMINAL JUSTICE

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
TEXAS ALCOHOLIC BEVERAGE COMMISSION				
Re-Engineer Legacy Database System	Program Support	\$4,122,450	9/01/2001	8/31/2003
TEXAS COMMISSION ON LAW ENFORCEMENT				
Online Peace Officer Training - POSEIT	E-Government	\$2,595,978	9/01/2000	8/31/2002
TEXAS DEPARTMENT OF CRIMINAL JUSTICE				
Offender Information Mgt. Reengineering Phase III (1)	Program Support	\$28,458,892	9/01/1999	11/04/2002
Enterprise Server Technology Refresh	IT Infrastructure	\$14,557,672	9/01/2000	8/31/2004
Offender Information Mgt. Reengineering Phase II (b)	Program Support	\$8,634,865	7/01/1998	7/17/1999
Uniform Statewide Payroll-Personnel System	Administration	\$4,143,495	5/01/1997	12/31/2002
Offender Information Mgt. Reengineering Phase II (a)	Program Support	\$3,239,982	1/01/1998	7/10/1998
Recruitment/Employment Retooling	Program Support	\$2,735,602	2/01/2001	12/31/2004
Enterprise-wide Inventory System	Administration	\$1,813,632	9/01/2001	8/30/2003
Computerized Maintenance Management System	Administration	\$1,725,680	7/01/1993	12/31/2003
Manufacturing System	Program Support	\$1,581,878	9/04/2001	8/31/2003
Point of Sale/Inventory System	Administration	\$1,466,205	9/01/1997	6/30/2000

PROJECT DETAIL

ARTICLE V – PUBLIC SAFETY AND CRIMINAL JUSTICE, continued

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
TEXAS DEPARTMENT OF PUBLIC SAFETY				
NCIC 2000/TLETS Project	Telecommunications	\$27,826,865	9/01/1998	4/30/2006
AFIS Hardware Upgrade Project	Program Support	\$23,358,396	1/01/1996	11/01/2001
Crash Records Information System	Program Support	\$15,200,000	10/01/1995	9/30/2005
Drivers License Offices Enhancements	IT Infrastructure	\$11,200,000	9/01/2002	8/31/2003
Enterprise Server Upgrade	IT Infrastructure	\$6,122,755	1/01/1996	8/31/2002
Purchase New Computer Equipment	IT Infrastructure	\$5,203,228	9/01/2000	8/31/2003
Backfile Conversion	Records	\$5,129,315	4/01/1999	3/31/2000
Computers, Printers, and SW	IT Infrastructure	\$4,368,995	9/01/1999	8/31/2003
Automated Drivers License Testing System (ADLTS)	Program Support	\$3,697,070	9/01/1999	
State Agency Sharing Initiative	Data Warehouse	\$2,600,000	9/01/2000	8/31/2003
Drivers License E-Commerce	E-Government	\$2,341,043	1/01/2000	8/30/2000
Replace Obsolete Computer Equipment	IT Infrastructure	\$1,324,113	9/01/1999	8/31/2003
AFIS/CCH Enhance- CJD Grant	Program Support	\$1,200,000	9/01/2001	8/31/2003
Infrastructure HW/SW Upgrades	IT Infrastructure	\$1,041,404	9/01/1999	8/31/2002
Network Management Software	IT Infrastructure	\$0	9/01/1997	8/30/2001
TEXAS YOUTH COMMISSION				
Workstation/ Infrastructure Business	IT Infrastructure	\$3,185,988	9/01/1999	8/31/2003
Workstation/ Infrastructure Education	IT Infrastructure	\$1,975,094	9/01/1999	8/31/2003
RAILROAD COMMISSION OF TEXAS				
Oil and Gas Migration	Data Warehouse	\$8,996,626	9/01/2001	8/31/2005
Electronic Compliance and Approval Process (ECAP)	E-Government	\$5,467,191	9/01/1999	8/31/2005

PROJECT DETAIL

ARTICLE VI – NATURAL RESOURCES

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY				
Water Availability Model	Geographic	\$16,786,677	4/01/1997	5/29/2004
Central Registry	Data Warehouse	\$8,052,300	10/22/1999	8/31/2003
Title V Federal Clean Air Act Information Mgt. System	E-Government	\$7,695,489	9/01/1994	8/31/2001
Replace PCs	IT Infrastructure	\$7,366,752	9/01/1999	8/31/2003
Consolidated Compliance Enforcement Database System	Data Warehouse	\$6,134,840	10/02/1998	8/31/2003
Water Utilities Integrated Database	Data Warehouse	\$5,456,510	10/01/1997	8/31/2001
OWM- OWRM Database Consolidation	Data Warehouse	\$4,754,321	1/01/1997	8/31/2002
State Implementation Plan (SIP) Data Management	Data Warehouse	\$3,627,454	2/21/2001	8/31/2007
Financial Administration System	Administration	\$3,103,000	9/01/2001	8/31/2005
Drinking Water Source Contamination Development	Geographic	\$3,069,898	9/01/1997	8/31/2002
State of Texas Air Reporting System	Program Support	\$2,610,050	1/15/1997	8/31/2003
NSR/ Title V Integration	Program Support	\$1,300,000	9/01/2001	7/01/2002
Document & Work Management	Records	\$1,077,924	8/31/1998	12/31/2000

PROJECT DETAIL**ARTICLE VI – NATURAL RESOURCES, continued**

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
TEXAS DEPARTMENT OF AGRICULTURE				
Information Systems Reengineering & Redesign	Data Warehouse	\$6,800,000	5/15/2000	8/31/2005
TEXAS PARKS AND WILDLIFE DEPARTMENT				
Technology Refresh	IT Infrastructure	\$6,393,475	9/01/1999	8/31/2003
Water Information Integration and Dissemination	Geographic	\$98,000	9/1/2001	8/01/2003
TEXAS WATER DEVELOPMENT BOARD				
Development of Shared Digital Base Map (StratMap)	Geographic	\$40,532,999	9/01/1997	8/31/2001
Water Information Integration & Dissemination	Geographic	\$3,895,404	6/01/2001	8/31/2005
Strategic Mapping Pool (StratMap Phase II)	Geographic	\$721,437	9/01/2001	8/31/2004

PROJECT DETAIL**ARTICLE VII – BUSINESS AND ECONOMIC DEVELOPMENT**

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
TEXAS DEPARTMENT OF HOUSING AND COMMUNITY AFFAIRS				
Normal Growth/ Integrated Systems	IT Infrastructure	\$1,243,411	9/1/2002	8/31/2005
PC Deployment/ LAN Upgrade	IT Infrastructure	\$1,026,768	9/1/2001	8/31/2005
TEXAS DEPARTMENT OF TRANSPORTATION				
Traffic Management (TRAFFIC) Project	Program Support	\$246,669,688	5/1/1992	8/31/2003
Growth and Enhancement	IT Infrastructure	\$36,980,712	9/1/2001	8/31/2003
Registration & Titling System (RTS) II (formerly RACER)	Program Support	\$18,866,159	9/1/2000	3/31/2003
Motor Vehicle Information System	Program Support	\$17,798,120	9/1/2001	8/31/2003
Enterprise Computing Project (ECP)	IT Infrastructure	\$17,181,527	9/1/1998	8/31/2003
Statewide Traffic Analysis and Reporting System (STARS)	Program Support	\$10,612,390	8/1/1999	12/31/2005
Traffic Data Project	Program Support	\$8,800,496	9/1/1993	8/31/2003
Develop Construction Management System (SITEMGR)	Program Support	\$8,073,057	3/1/1997	3/31/2004
Enterprise Networking Project (ENP)	Telecommunications	\$7,914,363	6/30/2000	8/31/2003
TxDOT Enterprise Resource Management System (TERMS)	Administration	\$5,885,316	8/1/1997	8/31/2001
Continued PeopleSoft Deployment (TERMS II)	Administration	\$5,556,184	9/1/2001	8/31/2004
Licensing, Admin'n, Consumer-Affairs and Enforcement	Program Support	\$4,226,942	11/1/1999	6/30/2004
Bridge Management Information System (BMIS)	Program Support	\$2,282,828	1/12/1992	2/28/2004
Enterprise Systems Management (ESM)	IT Infrastructure	\$2,222,505	9/1/1998	8/31/2001
Statewide Analysis Model	Program Support	\$1,732,900	4/5/2000	8/31/2003
GIS Architecture and Infrastructure Project (GAIP)	Geographic	\$1,622,694	2/1/1999	6/30/2004
Texas Historical Sites Atlas (ATLAS)	Geographic	\$1,394,392	2/1/1996	2/28/2001
TEXAS WORKFORCE COMMISSION				
Client/Server Human Resources and Finance	Administration	\$14,968,465	12/1/1996	8/31/2001
IBM Mainframe Lease	IT Infrastructure	\$8,731,493	12/19/1998	8/31/2003
TWIST Expansion	Program Support	\$8,475,190	9/1/1999	8/31/2001
IBM Mainframe Host Software	IT Infrastructure	\$7,627,320	12/19/1998	8/31/2003
E- Strategy	E-Government	\$6,250,946	9/1/2001	8/31/2003
PC Refresh	IT Infrastructure	\$5,263,907	9/1/1999	8/31/2003

PROJECT DETAIL

ARTICLE VII – BUSINESS AND ECONOMIC DEVELOPMENT, continued

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
TEXAS WORKFORCE COMMISSION, continued				
LAN/WAN Upgrades and Replacements	IT Infrastructure	\$4,853,310	9/1/1999	8/31/2003
Mainframe Infrastructure Upgrade	IT Infrastructure	\$3,879,590	9/1/2001	8/31/2003
Enterprise Imaging Solution	Records	\$2,476,636	9/1/1999	8/31/2001
VRU System Software Replacement Project	Telecommunications	\$2,110,000	9/1/2001	8/31/2003
Enterprise Development Projects - Data Warehouse	Data Warehouse	\$2,067,103	9/1/1999	8/31/2001
DASD Management and Growth	IT Infrastructure	\$1,585,000	9/1/2001	8/31/2003
Tape Library Expansion	IT Infrastructure	\$1,488,353	9/1/2001	8/31/2003
Open Systems Storage Expansion	IT Infrastructure	\$1,375,000	9/1/2001	8/31/2003
Voice Response Unit Replacement	Telecommunications	\$1,177,388	9/1/2000	8/31/2002
Redundant Mainframe- Network Connection	Telecommunications	\$495,000	9/1/2002	8/31/2003
UNIX Server Replacement	IT Infrastructure	\$370,000	9/1/2001	8/31/2002
Enterprise Server Storage Replacement	IT Infrastructure	\$350,475	9/1/1999	8/31/2000

PROJECT DETAIL

ARTICLE VIII – REGULATORY

AGENCY/PROJECT	PROJECT TYPE	CURRENT COST	START DATE	END DATE
TEXAS DEPARTMENT OF INSURANCE				
Technology Obsolescence - Replacement	IT Infrastructure	\$1,395,556	11/15/2001	8/31/2003
TEXAS STATE BOARD OF MEDICAL EXAMINERS				
Registration, Admin'n, Cash & Enforcement Reporting	Medical Information	\$924,066	9/1/1999	11/30/2002
TEXAS WORKERS' COMPENSATION COMMISSION				
Business Process Reengineering/Architecture Develop't	IT Infrastructure	\$21,390,000	12/7/1999	8/31/2007



APPENDIX D

AWARDS AND RECOGNITIONS

Since 2000, several state agencies and universities have received statewide and national recognition for outstanding information resources projects. The projects described here are models of innovative, creative, and judicious use of state resources.

Each listing includes the agency or university that conducted the project, the name of the project, the name of the award, the organization that sponsors the award, and a brief description of the project.

OFFICE OF THE ATTORNEY GENERAL

Child Support Interactive

- Laureate 2001, presented by *ComputerWorld* magazine, April 2001
- 2001 Edify Solutions First Place – Multi Channel CRM presented by the Edify Corporation, April 2001
- 2002 Council of State Governments Southern Regional Innovations Award presented by the Council of State Governments Southern Region, August 2002.

In September 1999, the Office of the Attorney General (OAG) implemented what is believed to be the first interactive Web site by a state child support agency. By leveraging existing interactive voice response system's hardware and software, the OAG was able to implement Child Support Interactive (<http://childsupport.oag.state.tx.us/>) in less than five months after conception and for less than \$30,000. Through this Web portal, child support customers are able to access a wide variety of information and services, including current payment information and case status, and the ability to apply for services online. Currently, the Web site receives over 350,000 visits per month.

Diana Williamson

2001 IT Executive of the Year, presented by the Association of Information Technology Professionals Austin Chapter, Austin ITEC, Austin Software Council, and Meritage Technologies

DEPARTMENT OF INFORMATION RESOURCES

TexasOnline

- Government Technology Leadership Award ("Gracie") presented by the Center for Digital Government, October 2001
- Trailblazer Award presented by E-Gov magazine April 2002
- George Mitchell Payments System Excellence Award presented by the Electronic Payments Association March 2002

TexasOnline was initiated by the 76th Legislature. The system was designed to be a common portal through which state and local government could send documents, receive applications, and receive payments. The goal is to provide "one-stop shopping" for government information and services to citizens and businesses.

The portal provides a uniform, secure infrastructure through which agencies and local governments can conduct transactions. This relieves organizations from the need to create and maintain the infrastructure. Costs are spread among many users. Development expertise gained by one agency can be shared with successive users. This tactic allows agencies to bring services online much sooner than if each agency had to develop the infrastructure and applications separately.

TexasOnline went into production status in January 2001. Since that time nearly four million transactions have been conducted online, and more than \$130 million has been collected through the portal.

TEXAS A&M UNIVERSITY AND THE UNIVERSITY OF TEXAS AT AUSTIN

TX-BB Internet Backbone

Institutional Excellence in Telecommunication Award presented by the Association for Telecommunications Professionals in Higher Education, September 2001

This award was for creation of a jointly managed, statewide Asynchronous Transfer Mode (ATM) backbone, called TX-BB, that supports joint Internet and intranet access for hundreds of entities in the state, including K-12 schools, community colleges, universities, municipal governments, public libraries, and hospitals. Projects such as these help Texas A&M University and the University of Texas at Austin to fulfill their mission to benefit the state's economy, serve the citizens through public programs, and provide public service.

TEXAS COMMISSION ON LAW ENFORCEMENT OFFICER STANDARDS AND EDUCATION

Distance Education Program

Exemplary Project Award presented by the Distance Education Community of Practice, University Continuing Education Association, 2000

Texas requires licensed peace officers to receive forty hours of continuing education every two years. They must complete this education to retain a valid peace officer license. Most law enforcement agencies have limited training funds and had to divert resources from other areas to fill these training requirements. Some agencies had to send personnel over 200 miles to the nearest training location.

To alleviate these difficulties, the Commission obtained state funding and developed a distance education program with the cooperation of the University of Texas Distance Education Department. The Commission developed the training programs, materials, study guides, and examinations. The University of Texas provides computer server support, technical assistance, and downloads completed training data into the Commission records system.

Training is available at no cost and there is no registration requirement. Students work at their own individual pace, and complete the course as time permits. The course material is also provided to training providers and agencies that prefer to provide the training in a traditional classroom setting. During the last training cycle, over 24,000 license holders took over 98,000 examinations on various topics. Participating agencies showed a savings in excess of two million dollars.

TEXAS DEPARTMENT OF HUMAN SERVICES

State of Texas Assistance and Referral System

- State Agency Excellence Award presented by the Texas Association of State Systems for Computing and Communications (TASSCC), May 2002
- Nominated for the Government to Citizen award of the National Association of State Chief Information Officers (NASCIO), 2002

The State of Texas Assistance and Referral System (STARS) is a bilingual, browser-based system (see www.txstars.net) that guides citizens through steps to determine their potential eligibility for more than 50 types of state assistance programs. Launched in July 2001, STARS is the first component of the larger Texas Integrated Eligibility Redesign System (TIERS).

In addition to being nominated for a NASCIO Recognition Award in the Government to Citizen category, STARS is also in the running for the Best of the Web contest sponsored by the Center for Digital Government.

TEXAS DEPARTMENT OF INSURANCE

System for Electronic Rate and Form Filing

Special Recognition Award presented by the National Association of State Chief Information Officers, May 2001

This award was presented to the State of Texas for chairing the consortium of states and insurance companies that produced the System for Electronic Rate and Form Filing (SERFF). SERFF is the first effort by states and the insurance industry to automate the paper-based process for submitting new or revised insurance products to state regulatory agencies for approval. The system, first released to production in early 1998 and now in its second revision, is Internet-based. It enables companies to send to states and for states to receive, comment on, and approve or reject, insurance industry rate and form filings without the creation of paper.

SERFF provides substantial benefits to both government and corporate sectors in several areas. It streamlines the

approval process, resulting in lower processing costs for all parties. It also gives advantages to consumers because insurance companies can be more responsive to market demands. In addition, SERFF supports the reforms directed by the Gramm-Leach-Bliley bill that overhauled the U.S. financial services sector. SERFF provides a flexible software platform for implementing radical changes in the way rate and form filing is done in the nation, at little additional cost to the system.

UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER

Clinical Data Repository

Nominated for the Enterprise Information Architecture Award sponsored by the National Association of State Chief Information Officers, 2002

This award category is for projects that "...promote/ implement an enterprise architecture framework that enables integration, interoperability and sharing of information with other entities. This effort will help improve efficiency and deliver exceptional services to citizens, business and other governmental entities."

The Southwestern Medical Center comprises numerous institutions and healthcare providers that provide specialized patient services. Most of these organizations have specialized databases of patient information. The Clinical Data Repository (CDR) is a master patient index and data retrieval system that links databases in all the affiliated institutions. It allows healthcare workers at any of the participating institutions to find all data about a patient without long waits for locating paper documents. It currently contains over 35 million clinical test reports for more than 2.3 million patients. CDR also includes extensive provisions for security and audit ability to protect privacy of patient data.

CDR has also been shown to decrease costs in numerous areas, but the leading advantage is the speed with which patient information can be found. For instance, users report that the system has reduced duplication of services and test procedures because caregivers have more immediate access

to patient data. Such rapid response may provide a life-or-death advantage in emergency care situations.

TEXAS DEPARTMENT OF PUBLIC SAFETY

Online Driver License Renewal Program

Nominated for the Enterprise Information Architecture Award sponsored by the National Association of State Chief Information Officers, 2002

In 1999, the Legislature authorized DPS to allow persons to renew driver licenses and identification cards by electronic means. DPS, TexasOnline, and BearingPoint began work on the project in September 2000. The service was publicly announced May 11, 2001, and since then more than 230,000 Texans have renewed their licenses or identification cards online.

The system features industry-standard security to protect personal and financial information and allows transactions to be traced throughout the system. All the major credit card types are accepted. The system architecture and the TexasOnline/DPS infrastructure have allowed DPS to quickly Web-enable other applications.

The system has received virtually unanimous positive reviews from users. The average turnaround time for online renewal is approximately 25% faster than for mail-in renewals. In addition, funds are deposited in state accounts far more quickly and with fewer errors than with manual methods.

THE UNIVERSITY OF NORTH TEXAS HEALTH SCIENCE CENTER

Online Student Evaluation of Faculty and Courses

Nominated for the Communications Infrastructure Award sponsored by the National Association of State Chief Information Officers, 2002

The Online Student Evaluation system, now known as Quality, is designed to provide curriculum planners with up-to-the-moment information from students about course activities and faculty performance. The system has reduced

turnaround time for processing evaluations from several months to a few minutes using a Web-based system.

Quality saves the Health Science Center more than \$75,000 per year in operating costs. Savings resulted from elimination of two personnel positions that were required to process paper evaluation forms. In addition, the system allows students to provide daily online comments for each course. With such feedback, a course director can change methods or topics as needed to improve student learning.

It is now possible for a course director to see the entire results of a course evaluation almost immediately following completion of a course. For courses that are offered each semester, this means that major changes can be made and implemented before the course is offered again. This provides the opportunity to significantly improve the curriculum.

THE UNIVERSITY OF TEXAS M. D. ANDERSON CANCER CENTER

ClinicStation

Nominated for the Innovative Use of Technology Award sponsored by the National Association of State Chief Information Officers, 2002

The University of Texas M. D. Anderson Cancer Center is ranked the number one cancer hospital in the *U.S. News & World Report* "America's Best Hospitals" 2002 survey. ClinicStation, developed at the Cancer Center, is a key contributor to this reputation.

ClinicStation uses Web services to integrate existing independent databases into a single patient history display. A critical part of this system is the integration of medical images. Under a manual system, clinicians needed to request a film jacket or go to the film library to review a patient's images. ClinicStation allows the clinician to request images online from anywhere on campus that has a suitable display.

Development cost is estimated to be \$200,000, and the system is scalable as needed. The Web services technology allows the development team to add features as more data

sources become available. All new features are accessed through a Web browser. This approach allows incremental functions to be made available quickly rather than waiting until all planned features have been completed.

Users report that the system is very intuitive; a recent upgrade was accomplished with five e-mail messages informing users of new features. In a recent month, over 300,000 patient queries were performed, and over 1 million clinical documents were reviewed. Annual return on investment is estimated at \$2.5 million, based just on efficiencies from viewing digital images.

TEXAS HIGHER EDUCATION COORDINATING BOARD

ARP/ATP Online System

Nominated for the Government to Government Award sponsored by the National Association of State Chief Information Officers, 2002

The Advanced Research Program (ARP) and Advanced Technology Program (ATP) are large competitive state grant programs created by the Texas Legislature in 1987. They process more than 3,000 proposal submissions at one time during a biennium. The paper-based process rapidly became unworkable, so the Board developed an Internet-based proposal submission process to replace paper submissions.

The project began in the spring of 1998, and by summer of 2001 nearly 25% of the proposals were processed with the system. It is anticipated that by April 2003, all aspects of the process will be fully Web-enabled. The project reengineered some of the processes to reduce paper processing. For instance, a pre-proposal step was added to reduce the number of potentially ineligible projects. The system also focused on reducing the amount of time spent on the review and approval process, and enhancing access to data related to the process.

Prior to implementation of the program, approximately 2,900 grant proposals were processed per biennium. By 2001, the number of submissions had increased to 4,461. By 2003, when the system is fully electronic, it is expected to process three times the number of applications as the

pre-Internet system, and the number of personnel required to process applications will have decreased. Progress of reviews can be tracked, documents can be transferred among administrators and reviewers easily, reviews can be assigned to reviewers anywhere in the world, and the reviewer can submit questions electronically and receive answers from Board staff quickly. As a result, reviews of proposals that used to take three weeks now take three days.

The system has been so successful that several institutions have made suggestions to the National Science Foundation on how to improve the national electronic grant system, using concepts from the ARP/ATP Online System.

firm. The system is audited annually to ensure system security and integrity.

Users can conduct business and reconcile accounts online 24/7, 365 days a year using any computer with a Web browser and Internet access. Numerous features trap errors and alert users to missing reports or amounts outstanding. Amendments to reports can be filed online as well. These features have saved companies hundreds of thousands of dollars in penalties and interest charges.

THE UNIVERSITY OF TEXAS SYSTEM ADMINISTRATION

ERS/e-CARE

Nominated for the Government to Business Award sponsored by the National Association of State Chief Information Officers, 2002

ERS/e-CARE is a less intimidating acronym for the Electronic Reporting System for Reporting and Payment of Oil and Gas Royalties and Virtual Electronic Customer Accounts Receivable Account Reconciliation. The University Lands Accounting Office that developed ERS/e-CARE oversees required reporting of royalties for all oil and gas leases on Permanent University Fund lands. Prior to January 1, 2000, the office received an estimated 5,600 paper reports and other documents each month. Currently, over 95% of all reports on royalties on university lands are handled electronically. Error rates have been reduced by over 85% and the information is available within three days of being received, instead of 60 days under the paper-based system. At the same time, staffing levels have been reduced by more than 25%.

This is the first state or federal royalty-receiving agency to achieve a 95% success rate for royalty reporting and payments, and it is the only agency to have a virtual online accounts receivable function. User buy-in and trust was achieved by providing training and obtaining an independent audit of the design by a national accounting



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The primary sources for this glossary are the *Computer Desktop Encyclopedia* (www.computer-select.com), *Newton's Telecom Dictionary* (www.whatis.com), and *TechWeb's Tech Encyclopedia* (www.techweb.com).

Advanced Telecommunications Services – In this context, telecommunications services that may include traditional voice communications but also include IR services such as Internet access, broadband, and wireless communications.

AFIRM – Architecture Framework for Information Resources Management. The AFIRM provides guidance to govern the evolution of the State information systems infrastructure. The AFIRM does not provide specific system architecture. Rather, it provides the services, standards, design concepts, components and configurations which can be used to guide the development of architectures that meet specific agency requirements.

Architecture – The organizational structure of a computer system or component. The five fundamental components that form a computer's architecture are Input/Output, Storage, Communication, Control, and Processing.

Audioconferencing – Using telecommunications technologies to converse in realtime among three or more people who are in different locations.

BCP – See Business Continuity Planning.

Benchmarking – A systematic study of products or business practices in order to improve performance. For computer systems, it is a standardized problem or test that serves as a basis for an evaluation or comparison of performance.

Best Practices – A term used to describe generally agreed upon processes, derived from experienced industry experts, that should be undertaken when deploying projects in order to decrease operational and financial risk.

Biometric Authentication – The identification of a person according to unique biological traits, such as fingerprints, voice waves, and retina patterns.

Biometrics – The technologies used to analyze and identify a person's unique physical characteristics, especially for authentication purposes.

BlackBerry – A handheld wireless e-mail device from Research In Motion, Ltd., Waterloo, Ontario, Canada (www.blackberry.net). These devices remain constantly online in order to receive e-mail and Internet content. They also function as personal information managers that facilitate the use of electronic address books, calendars, and other available applications.

Broadband – A generic term that implies higher data transmission rates higher than those which are available through dial-up connections (in excess of 56 Kbps). "Broadband" may describe telecommunication in which a wide band of frequencies is available to transmit information. In some cases it means rates in excess of 144 Kbps, depending on the vendor that is describing it.

Business Continuity Planning (BCP) – The process of identifying mission-critical data systems and business functions, analyzing the vulnerabilities and risks of disruption to those systems and functions, and then developing procedures that enable systems and functions to resume as quickly as possible both during and after a disruption.

Capability Maturity Model Integration (CMMI) – A methodology developed at Carnegie Mellon University for analyzing and improving an organization's processes. It is being widely adopted in private and public sectors for improving management and control of IR projects.

Carrier – An organization that provides telecommunications transmission services.

CCTS – Capitol Complex Telephone System.

CIO – Chief Information Officer. The CIO is the executive in charge of an organization's information resources processing. "CIO" is also the name of an industry publication targeted to information officers (www.cio.com).

CMMI – See Capability Maturity Model Integration.

Computer Crime – The unauthorized use of a computer, computer system, or network for the purpose of causing harm to others or for personal gain.

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Computer Emergency Response Team (CERT) – As a generic term, CERT refers to any team that exists for the purpose of coordinating IR resources from various entities in order to more efficiently relieve and compensate for any extreme interruption experienced by an organization's network or technology infrastructure. Alternatively, the CERT Coordination Center (officially CERT/CC and originally called the "Computer Emergency Response Team") is a major reporting center for security problems located at SEI and operated by Carnegie Mellon University.

Computer Forensics – A technologically detailed discipline that examines and analyzes computer components and data to discover potential legal evidence in a computer crime.

Connectivity – The ability to communicate across or between networks.

Converged Networking – The integration of telephone networks with data networks that use Internet protocol (IP).

Contingency Planning – A plan for responding to the loss of computer system functionality as the result of a disaster such as a flood, fire, computer virus, or software failure. The plan includes procedures for emergency response, backup, and recovery.

County Information Resources Agency (CIRA) – An interlocal government agency created under the authority of TEXAS GOV'T CODE, Chapter 791 that provides assistance to its members in all matters relating to information resources and technologies.

Critical Infrastructure – Key systems and resources so crucial that their failure or ruin would have a devastating impact on national security, economic security, and/or public health and safety.

Cyber Attack – An assault against the electronic information or communication components that control a computer system or network.

Data Definition – The description of a data element. It usually includes the type of data (e.g., text, date, numeric), name(s) by which the data is identified, usage of the data, and other information. See also Data Structure.

Data Encryption – The conversion of data into a form that cannot be easily understood by unauthorized users in order to more securely transmit data over a public network.

Data Transfer Speed – The rate at which data is transmitted over a network.

Data Structure – The format used to organize and store data. Types of formats include fields, records, tables, spreadsheets, files, and indexes.

Denial of Service (DoS) – A security breach in which a network can no longer respond to normal requests, usually due to a flood of phony traffic being directed at the network. The result is that users are deprived of the services or information of a resource they would otherwise expect to have.

DHS – Department of Human Services.

Digital Divide – The difference in the level of technologies readily available to and used by any two groups.

Disaster Recovery – A plan for restoring and/or continuing computer operations after a catastrophe such as a fire or earthquake. It includes routine off-site backup and procedures for activating necessary information systems in a new location. A disaster recovery plan may also be referred to as a business continuity plan (BCP).

Distance Learning – Obtaining education and training from a remote teaching site via TV or computer.

E-Commerce – See Electronic Commerce.

E-Government – See Electronic Government.

E-Rate – Also called the Schools and Libraries program, E-Rate is a federally sponsored means of providing U.S. schools and libraries with discounts of 20% to 90% on telecommunications services such as phone service and Internet access.

Economies of Scale – A reduction in unit cost brought about especially by increased production.

EDI – See Electronic Data Interchange.

Electronic Commerce – The use of communication technologies to transmit business information and transact business. Telephone business transactions and Internet commerce are forms of E-commerce.

Electronic Data Interchange (EDI) – The electronic transfer of data between business organizations, usually based upon a standard format.

Electronic Government – The online provision of services and information among governmental entities, the public, and the private sector.

Enterprise – A unit of economic organization or activity, especially, a business organization.

eXtensible Markup Language – See XML.

Firewall – A set of hardware and software designed to protect against network intrusion by examining and filtering incoming packets of information.

FOIA(s) – Freedom of Information Act(s). Can refer to either federal or state legislation regarding information that must be accessible to the general populace.

Geographic Information System (GIS) – A system of computer hardware, software, and procedures used to store and manipulate electronic maps and related data to solve complex planning and management problems. The raw input for these maps comes often from satellite photographs. Maps created by a GIS can assist with exploration, demographics, dispatching, and tracking.

Geospatial – Information that identifies the geographic location and characteristics of natural or constructed features and boundaries of the earth.

Guideline – A statement of policy issued by an authoritative group that determines a course of action.

Hacker – While some use the term “hacker” to simply refer to a proficient programmer, the term is often used to refer to someone who tries to circumvent or bypass the security mechanisms of an information system or network.

Handheld – A mobile, compact computing device that can be used while being held. Also known as a personal digital assistant.

High-availability Technology – In IR, high availability refers to a system or component that is continuously operational for an extended length of time. This includes technology that can quickly recover from a failure.

HIPAA – Health Insurance Portability and Accountability Act.

Incumbent Local Exchange Carrier (ILEC) – A traditional local telephone company.

Information Resources (IR) – As defined by the Information Resources Management Act, the procedures, equipment, and software that are designed, built, operated, and maintained to collect, record, process, store, retrieve, display, and transmit information, and the associated personnel, including consultants and contractors.

Infrastructure – (1) In IR, the physical hardware used to interconnect computers and users, as well as the software used to send, receive, and manage transmitted signals. (2) The basic facilities, services, and installations needed for the functioning of a community or society, such as transportation and communications systems, water and power lines, and public institutions including schools, post offices, and prisons.

Internet – A global system of TCP/IP (Transmission Control Protocol/Internet Protocol) computer networks in which users at any one computer can, if they have permission, get information from any other computer.

Interoperability – The ability of two or more systems or products to work together without special effort. For example, routers and switches in a network require interoperability. The term is more often used with hardware than with software.

Intrusion Detection (ID) – A type of security management system that gathers and analyzes information from various areas within a computer or a network to identify possible security breaches from both without and within the organization.

IR – Information Resources. Often used interchangeably with IT, Information Technology.

IRM – Information Resources Manager

Justice XML Standard Initiative – A program developed by the U.S. Department of Justice, Office of Justice Programs. The goals of the Justice XML Standards Initiative are “to facilitate sharing of justice information and integration of justice information systems among various federal, state, and regional jurisdictions; to establish ‘ground floor’ information standards; to guide and assist justice and public safety information systems developers; and to further other efforts to share justice information.”

Kbps – Kilobits per second (1000 bits per second).

Landline – Refers to the media, such as cables and wires, used by standard communications systems (usually traditional telephone systems) to establish physical connections over which voice and data can be transmitted.

Linux – An open source operating system similar to UNIX that runs on a variety of hardware platforms. See also Open Source.

Lone Star Card – An electronic debit card used to supplement the ability of low-income families to purchase groceries. The Lone Star Card replaced food stamp coupons originally used for this purpose.

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Mail List Server – A program that manages an electronic mailing list and distributes messages, newsletters, or other postings from the list’s members to the entire list of subscribers as they occur or are scheduled.

Markup Language – A set of labels, or “tags,” that are embedded within text to identify the data elements or content being used.

Metadata – Data about data. This can include descriptions of each data element, or information about how and where the data is stored or used. Because XML tags describe the underlying data within the source code, it is sometimes referred to as metadata,

MIPS – Million instructions per second. A general measure of computing performance.

NASCIO – National Association of Chief Information Officers.

Migration Strategy – The plan used when changing from the use of one hardware or software technology to another.

Mobile – Not restricted to a desktop.

Network – A series of interconnected elements used to transfer data and allow communication between users.

Open Archival Information System (OAIS) – An ISO reference model used for the long-term preservation of digital records.

Open Source – A description of software or programs that are free and in which the source code is available to be modified, developed, and supported by the user community.

Personal Digital Assistant (PDA) – Any small, mobile, hand-held computer that serves as an organizer for personal information such as appointments, addresses, and to-do lists. Generally synonymous with the term “handheld.”

PESO – Public Electronic Services On-the-Internet. The PESO Working Group was established to provide a forum for addressing policy and technology issues related to improving access to government information and services via the Internet/Intranet or Extranet.

Performance Measures – A set of metrics that are used to measure an organization’s performance in a specified area, resulting in a benchmark for analysis and future improvements.

PMI – See Project Management Institute.

PMO – See Program Management Office.

Portal – A single online gateway to a number of services eventually providing access to all information and transactions relating to the entity providing the portal.

Privacy Policy – A statement made by an organization that explains how it will use and/or distribute user-provided personal information.

Program Management Office (PMO) – A shared organizational structure that may simply serve as a repository of information for project reporting and disseminating best project management practices and methodology. In other cases, it is a competency center that provides project expertise and oversight for the business; or it acts as an internal consultant to run projects. In Texas, the PMO operates within the Department of Information Resources and directs and facilitates the implementation of electronic government projects in the state.

Project Management Institute – The world’s leading not-for-profit project management professional association. PMI provides global leadership in the development of standards for the practice of the project management profession.

PUC(T) – Public Utility Commission (of Texas).

QAT – Quality Assurance Team.

Quality Assurance – A critical review process to ensure that a task is adequately and correctly performed.

Records Management Interagency Coordinating Council – RMICC is composed of representatives of seven state agencies and has direct authority over policy affecting the management of state government records in Texas.

Risk Management – The process of organizing and regulating activities in order to reduce strategic, financial, accidental, and other risks, as well as the effects of risk on an organization’s capital and earnings.

RMICC – See Records Management Interagency Coordinating Council.

Rule – An authoritative direction for conduct, especially one of the regulations governing procedure in a legislative body.

SACC – State Agency Coordinating Council.

Security Policy – A document that states how a company plans to protect the company’s physical and informational assets. It will likely define what constitutes acceptable use of its assets, as well as what constitutes a breach of security.

SEI – See Software Engineering Institute.

Smart Card – A credit card-sized device with embedded computer chips and memory. The card can contain data about users and programs to provide security and privacy.

Smart Phone – A telephone that provides standard voice service along with advanced features, such as PDA functionality, web access, and/or text messaging.

Software Engineering Institute – A federally funded research and development center sponsored by the U.S. Department of Defense through the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics [OUSD (AT&L)]. Its core purpose is to help others make measured improvements in their software engineering capabilities.

Standard – A publicly available specification of a hardware or software component, resulting from international, national, or industry agreement.

STARS – State of Texas Assistance and Referral System. Allows users to self-screen for potential eligibility for programs provided by the Texas Department of Human Services and other Texas state agencies.

Storage Management – The administration of data backup, archival, and disaster recovery procedures.

TASSCC – Texas Association of State Systems for Computing and Communications. A nonprofit organization committed to promoting the use of information technology in improving the provision of public service in the state of Texas.

Telecommunications – A transfer of information, including data, text, pictures, voice, and video, over long distances using telephone or radio communications systems. The transmission, reception, and the switching of signals may occur over cable or wireless connections.

Telecommunications Infrastructure – A collection of telecommunications components that provide the basic support for the distribution of all information within a region.

TEX-AN – TEXas Agency Network. The Texas state government telecommunications network.

Texas Infrastructure Protection Center (TIPC) – An information sharing center, proposed by the Office of Attorney General, that would serve as a single point of contact for the protection of the state's critical assets.

TexasOnline Authority – A group of representatives from state agencies, local governments, higher education, and regulated businesses that coordinates the growth of electronic government services in Texas.

TGIC – Texas Geographic Information Council.

TIERS – Texas Integrated Eligibility Redesign System. TIERS gives Texas Department of Human Services eligibility workers a single, integrated system used in delivering services such as providing food and medical assistance. See also STARS.

TIF – Telecommunications Infrastructure Fund. Funds telecommunications initiatives and distance learning projects in schools, libraries, and hospitals throughout the state in the form of grants and loans.

Texas Justice Information Integration Initiative (TJI³). An interagency group that produced a plan to facilitate the sharing of critical justice information across state and local institutions within Texas.

TLC – Texas Library Connection.

TPOC – Telecommunications Planning and Oversight Council. The group legislatively tasked with oversight of the state's telecommunications networks, including the Texas Agency Network (TEX-AN), and the Capitol Complex Telephone Network (CCTS).

Transaction Cost – A cost associated with the exchange or transfer of goods, services, or funds.

Uniform Electronic Transaction Act (UETA) – A procedural statute with the fundamental purpose of removing perceived barriers to electronic commerce by establishing electronic records and signatures as equally binding as paper writings and manually applied signatures.

Usability Lab – A lab used to evaluate a product's ease-of-use, task time, and user perception of the experience.

Videoconferencing – A video communications session conducted in realtime among three or more people who are in different locations.

Virus-Oriented Attack – An unexpected and usually harmful assault on a computer system or network by a piece of self-executable and self-replicating programming code.

Voice over IP (VoIP) – A technology used to transmit voice conversations over a data network using the Internet Protocol. Data and voice services can be integrated to provide a variety of applications.

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Vulnerability Assessment – Evaluation for security weaknesses in an operating system, network, or software application.

Webcasting – Broadcasting live or delayed versions of sound or video over the Web.

Web Phone – A cell phone with Web access.

Web Site Compromise – A breach in security that allows unauthorized use of, destruction of, or access to data via a front-end Web application.

Wireless Communications, Wireless Computing – The method of transferring information between a computing device, such as a personal data assistant (PDA), and a data source, such as an agency database server, without a physical connection.

World Wide Web (WWW or Web) – The universe of information presented in a variety of formats, such as text, graphics, animations, videos, and hyperlinks, available from multiple computers throughout the world, linked together in the Internet.

WTDROC – West Texas Disaster Recovery and Operations Center. Provides computer operations and disaster recovery services to tax-supported organizations. The state-owned facility is housed at Angelo State University, in San Angelo, Texas.

XML – eXtensible Markup Language. A subset of SGML (Standard Generalized Markup Language) used especially for Web documents and data transmission. It is an open standard recommended by the W3C (World Wide Web Consortium) that allows developers to, within set rules, create their own tags to describe data.



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